DOCUMENT RESUME

ED 206 209 HE 013 963

AUTHOR	Richardson, James T., Ed.; Ginsburg, Gerali P., Ed.
TITLE	Higher Education in Nevada. Nevada Public Affairs Review, Number 1, 1981.
INSTITUTION	Nevada Univ., Reno. Bureau of Governmental Research.
PUB DATE	81
NOTE	82p.
AVAILABLE FROM	Bureau of Governmental Research, University of Nevada, Reno, NV 89557 ($1.00).
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	Budgeting; College Faculty; *College Role; Communications Satellites; *Community Colleges; Comparative Analysis; Computer Science Education; Continuing Education; *Educational Finance; Educational History; Educational Policy; *Educational Technology; Financial Support; General Education; *Graduate Study; *Higher Education; Medical Education; Professional Education; Regional Cooperation; Research Projects; State Universities; Teacher Salaries; Technological Advancement; Telecommunications; Trend Analysis; *Undergraduate Study; Upper Division Colleges
IDENTIFIERS	*Nevada; University of Nevada Las Vegas; University of Nevada Reno; Western Interstate Commission for Higher Education

ABSTRACT

The state of higher education in Nevada is addressed in 14 papers presented in the "Nevada Public Affairs Review." In addition to considering past, present, and future trends in higher education, comparisons are made to higher education in other states, and the university and community college segments are examined. Contents are as follows: "Nevada Higher Education and the Carnegie Report" (John P. Marschall and Robert L. Johnson); "The State of the University: UNR in 1980" (Joseph N. Crowley); "Strategies for the Eighties: Undergraduate Education for Tomorrow's Leaders" (Richard O. Davies); "Graduate Education in Nevada" (R. D. Burkhart); "The Crisis in Values: Report of a UNR Conference" (James W. Hulse); "A History of the Community College Movement in Nevada" (John A. Caserta); "The Future of Community College Education in Nevada" (Judith S. Eaton); "The Comprehensive Community College" (James Eardley); "WICHE and Professional Education in Nevada" (Don W. Driggs); "Computers in Higher Education: The Next Decade in Nevada" (Allen H. Brady); "Educational Telecommunications in Continuing Education" (Rovert E. Dickens); "The History of Budget Formula Development for Nevada Universities" (James T. Richardson and K. Donald Jessup); "Support for Higher Education in Nevada" (Owen Albert Knorr and Kari Coburn); "A Decade of Decline in Faculty Salaries" (Alfred W. Stoess); and "Higher Education Policy: A Bibliography" (Thomas Stauffer). (SW)

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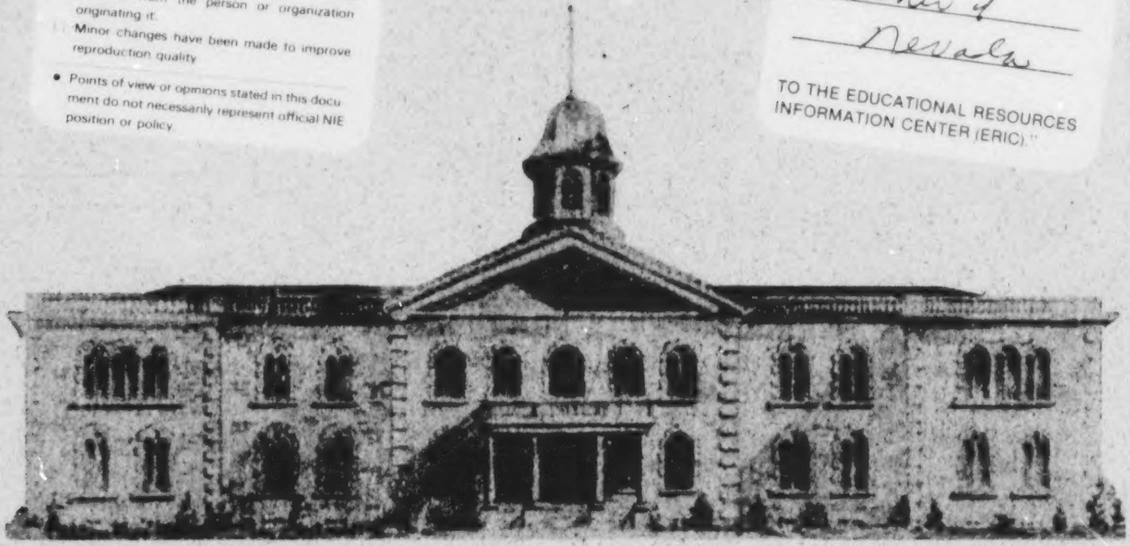

Nevada Public Affairs Review

Higher Education in Nevada

1981, Number 1 One Dollar

HE 013 968

Nevada Public Affairs Review

Issue Editor: James T. Richardson*
University of Nevada, Reno

***with the assistance of Gerald P. Ginsburg**

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Nevada Public Affairs Review

The University of Nevada System takes pride in its efforts to provide Nevadans with the public services that can come from their institutions of higher education. As part of this effort, the personnel of the Bureau of Governmental Research at the University of Nevada, Reno, are pleased and proud to announce the fourth issue of the *Nevada Public Affairs Review*.

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Editor's Introduction

by James T. Richardson

This special issue was developed to inform Nevada citizens and leaders about higher education in the state. The fourteen papers in the issue contain a mix of *history*, recounting how we got where we are, *description of the present*, telling how we compare and rank with other states, and a *focus on the future*, indicating where we should be trying to go with higher education in Nevada. The papers also look at both major elements of higher education in the system — the universities and the community colleges — with some papers focusing directly on one or the other element and a number of papers which discuss them together.

The issue opens with a paper by John Marschall and Robert Johnson which relates Nevada education to the important recent work of the Carnegie Commission, *Three Thousand Futures*. This report has become something of a "bible" for educational planners around the country, and it behooves us to understand how Nevada relates to the national picture presented in that work. Marschall and Johnson note that Nevada does *not* fit the pattern of steeply declining enrollments that will characterize much of higher education in America. Indeed, there is considerable evidence to suggest a substantial growth pattern for higher education in Nevada, if the state decides to meet the higher educational needs of its rapidly growing population and diversifying economy.

The second paper is specifically focused on the University of Nevada at Reno. The article was taken from a "State of the University" talk given by President Crowley to the faculty and staff of UNR in the fall of 1980. The talk was well received because it indicated the kind of creativity and energy that is being put into improving Nevada higher education. Readers should note that this paper offers a close look at the "nuts and bolts" of implementing some important ideas and ideals. Hopefully the many goals outlined by President Crowley can be accomplished during the next decade.

Richard Davies, the new Vice-President for Academic Affairs at UNR, offers his views on higher education. For many readers this will be the first look at the new vice-president; Dr. Davies is a person of many ideas and considerable energy who has come to Nevada to try to implement some of his thoughts on improving higher education. His views on what an educated person should know are particularly provocative, as are his stimulating ideas on the importance of faculty as a capital investment for the state.

Whereas the Davies paper focused mainly on the proper dissemination of knowledge, the next paper emphasizes the important *knowledge production* function of the university system. Richard Burkhart is Chairman of the Chemistry Department at UNR, and is in an excellent position to speak on graduate education and research in Nevada. He is involved in one of the strongest graduate departments in the state, he sits on the UNR Graduate Council, and he recently chaired a committee responsible for developing a report on graduate education at UNR for presentation to the Board of Regents. He reminds us of the importance of graduate education, both in terms of meeting the needs of the state's economy and in terms of offering needed educational opportunities to Nevada citizens. Some of his most interesting comments concern the value of research and graduate education for improving the quality of undergraduate education.

The next paper is derived from a report filed by noted UNR historian Jim Hulse, who was primarily responsible for developing a very valuable conference on "The Crisis in Values" last spring. The report summarized the lectures and responses for the Nevada Humanities Committee, which was a major sponsor of the event. The paper offers needed general and abstract thinking about what higher education should be doing in our state, nation, and the world. The speakers were excellent, and they provoked considerable comment both from panelists and the audience.

The next three papers focus on the newly-developed and quite popular community college system in Nevada. The first paper is taken from the dissertation of John Caserta, who earned his doctorate in Educational Administration at UNR, with a study of the history of the community college system. His paper is a year-by-year summary of major events in the short history of our community colleges, with some interpretation. Thus he offers his view of "where we have been" with community colleges in Nevada. The next two papers indicate some possible directions for the future. Judith Eaton's paper deals with the problems and goals of Clark County Community College. She presents a number of creative ideas concerning how community colleges can better serve the people of her area, and issues a call for adequate financial support to allow needed development. James Eardley, who was recently appointed President of Truckee Meadows Community College, offers his ideas about the future of community college education. He begins with a summary of a widely-cited Carnegie Council report on community college development, and notes how we in Nevada have followed most of the major recommendations from that important study. Of particular interest in Eardley's paper is his discussion of the value of general liberal education to the educational goals of the comprehensive community college.

The next paper is a valuable history of the development of WICHE, which is the acronym for Western Interstate Council on Higher Education. This organization was originally established to increase professional and graduate education opportunities for citizens of Western states which did not have a full range of professional and graduate education programs. Don Driggs is one of Nevada's three WICHE commissioners and is well-informed on the history and operation of WICHE. Readers of the paper will realize the importance of WICHE to the educational life of the state, since literally hundreds of Nevadans have been participants in various WICHE-sponsored programs. Of special interest is a brief but informative history of the development of medical education in Nevada.

The next two papers focus on technological innovations of import to education. Allen Brady has been associated with computing in the university system for years, and has recently become a member of the faculty in the UNR Department of Mathematics. He offers an admittedly idealized view of how thoroughly computing should be integrated into the curriculum of education. Implicit in his paper is recognition that we have a long way to go before all students in higher education have needed opportunities for gaining knowledge about computing, but also implicit is an optimism that, given proper financial support in this crucial area, we will do what we should for our students.

The paper by Robert Dickens attempts to outline new ways of educating using technology as simple as the telephone. He discusses the UNITE system, which is a state-wide telephone network that allows courses to be taught and conferences to be held involving participants and students who are hundreds of miles apart in specially equipped centers. His paper is a precursor of the future which allows a peek at the educational technology that will probably be commonplace within just a few years. The paper also offers an even more exciting possibility of adding a visual component to the system using space satellites for television transmission.

The next three papers are directly related, with a common focus on the financing of higher education in Nevada. Those not familiar with this crucial aspect of higher education should attend carefully to these papers, if only to understand the direct relationship of quality of education to level of financial support. As the papers demonstrate, we have a prosperous state, but that prosperity is not always reflected in support for higher education.

The paper by Richardson and Jessup presents the history of formula-based budgeting for UNR and UNLV. This paper reveals some misunderstanding and misapplication of the formula approach some years ago, and points out that we compare quite unfavorably with other states and similar institutions in terms of level of financial support. The paper closes with a set of recommendations for rectifying a situation that is quite problematic, especially given the rapid growth of the state.

The Knorr and Coburn paper presents a more detailed analysis of how we compare with other states and institutions in amount of financial support appropriated. The picture painted by this careful examination of available data on support levels is not an optimistic one. Unless the state's political leaders decide to support higher education at significantly higher levels than has been the case, the 1980s will be a decade of lost opportunity for Nevada higher education.

The last paper is by no means least. Significantly, I chose to close the issue by raising the question of faculty salary levels. The paper by Stoess demonstrates that faculty salaries have deteriorated significantly in the past decade, and the situation promises only to get worse unless drastic steps are taken. The importance of remaining competitive in the area of faculty salaries is crucial to improving higher education in Nevada. We in the state have an opportunity to improve overall faculty quality by offering competitive starting salaries, and we have the opportunity to keep quality faculty by rewarding them for good work. If we grasp this opportunity, the quality of education will be significantly altered for decades.

Articles on many other subjects could have been included; indeed, several others which were commissioned were not completed in time for inclusion in the collection. However, it is hoped that the fourteen papers that were included offer something of the flavor of higher education in Nevada, with its many problems and potentials. Those who read the issue will, we hope, reflect on the importance of the next decade to Nevada higher education. By 1990, Nevada will probably have well over one million people. Only considerable forethought and commitment by leaders of the state will guarantee that we have a system of higher education capable of meeting the higher educational needs of the state at that time.

In closing, I would like to thank several people who helped with this special issue, among them Richard Siegel and John Dodson, who served as readers and advisers on the papers, and especially Gerald Ginsburg, who helped with every part of the project. I would also like to thank Felicita Young, who did excellent work copy editing and taking care of many details, and Shirley Armstrong, who typed a number of manuscripts. Also, of course, I would like to thank all of those who wrote papers for the issue. Most of the people asked were very busy and took time from packed schedules to help others understand various aspects of Nevada higher education.

Nevada and the Carnegie Report

by John P. Marschall and Robert L. Johnson

The prestigious fifteen-member Carnegie Council on Policy Studies in Higher Education has brought its work to a close with the publication of a document that takes a hardheaded look at the prospects for U.S. higher education. Entitled *Three Thousand Futures: The Next Twenty Years for Higher Education*, the book is essential reading for anyone with responsibilities for making choices between academic excellence and institutional survival.[1] Nevada readers will find that while the indicators are negative for higher education enrollment across the nation, the Silver State is one of seven singled out as having a "much better than average" projected enrollment relative to the national average.

The report was directed by Council Chairman Clark Kerr, who has monitored the explosive growth of post-secondary and higher education in the last decade. Kerr first came to national prominence as the President of the University of California when he raised critical questions about the manageability of "the multiversity" under a coherent educational policy. During his five years as head of the Carnegie Council, Kerr supervised the publication of 35 reports on the health and prospects of American education with far-reaching effects on governmental policy questions and internal academic decisions.

Part One of *Three Thousand Futures* is a set of eight summary chapters analyzing enrollment trends, new data on funding sources, problems associated with an aging and fully tenured faculty, and setting forth the difficult alternatives facing various kinds of institutions. Part Two, comprising roughly two-thirds of the 440-page report, consists of twelve resource documents on a variety of topics from funding sources to faculty development. These documents are the data base for the Carnegie Council's conclusions, while providing easily-read charts for administrators to compare their own institutions with nationwide trends.

The summaries and the supplemental materials are full of startling contradictions of popular myths and intriguing forecasts. While the report pays attention to certain state statistical and demographic profiles, it does not attempt the enormous task of assessing the subtle or unique attitudinal postures peculiar to each state. This article will attempt to place Nevada's higher education future among the thousands of possible scenarios. But first it is necessary to review the nation's higher education institutions in the aggregate.

A National Overview

The Carnegie volume somewhat allays fears over the status of higher education in the 1970s. The widespread impression of slippage of public support is chastened by statistics demonstrating that most institutions (59 percent) gained in FTE enrollment in the 1970s, expenditures on instructional costs per student remained steady, and state support for post-secondary and higher education increased appreciably. The report also cites evidence of high public confidence (higher education being second only to television news!) as the decade of the '70s came to a close.

Higher Education in the United States at the beginning of the 1980s is characterized by:

—Increasing concentration of students in public institutions

—More and more regulation by governmental agencies of both public and private institutions

—More dependence on public sources of financial support

—Heavy concentration of students on large campuses of traditional form

—Slowing and uncertain rates of enrollment growth

—More defensive reactions internally (including increased unionization)

—A new generation of students with lower levels of developed aptitude

—An aging faculty

—More pressure to serve the student market, with emphasis on survival rather than excellence.[2]

The details of this national profile are fascinating. As the report notes regarding the accent on the role of the large institutions, "Campuses with more than 10,000 students accounted for one-quarter of all enrollments in 1955 and one-half in 1977; campuses with fewer than 500 students accounted for eight percent in 1955 and 1.5 percent in 1977." On faculty aging, "The last heavy period of faculty hiring was from 1960 to 1970; the next will be from 2000 to 2010." The new students have lower levels of developed aptitude (verbal test scores declined 11 percent in the period 1963-1979), are less active politically, less respectful of rules (as evidenced by higher defaults on loans and greater vandalism), and less hopeful about the world.[3]

The most dramatic national change in the next two decades will be sharply declining student enrollments. While there are several variables, such as draft policy, veterans' benefits, and inflation, whose effects are not predictable, the report foresees a 19 percent decline in the next twenty years due to population decline in the 18-24 age group. The decline will come at an uneven pace.

Institutions whose enrollment preojections are at or below the national average will have about three years to adjust budget, faculty hiring, and program to the impact of the first decline in Fall of 1983.[4]

The report also foresees other alterations in the national composition of enrollments. The next twenty years will see:

—more white females

—more blacks

—more Hispanics (one-half of whom are in two states, Texas and California)

—more part-time students

—more foreign students

—a slight rise in the number of graduate students (and a 50 percent decline by 1990 in Ph.D. candidates).[5]

The challenges to all institutions in the next two decades will be to maintain diversity and distinctiveness, to impart higher levels of skill attainment — from basic literary to computer languages — to be a part of the "endless frontier" of scientific research, and to educate a more active, better informed, and more humanely oriented citizenry with greater equality of opportunity.[6] Two other goals set for higher education contain an implied criticism of the declining social role of the churches and other humanitarian organizations. The report suggests that higher education provide a seedbed for social criticism and national self-renewal while also filling people's need to be part of a nurturing community. Finally, in an age of increasing awareness of our limited natural resources, higher education will be challenged to explore resource alternatives while itself experiencing a national decline in its normal constituency.[7]

Having urged institutions to adopt policies which will enhance their futures, the Carnegie Council provides a checklist of imperatives for state and federal government. Those for the federal government include: maintenance of tax incentives for contributions to education, avoidance of excessive regulation, maintenance of stable support for medical education without encouraging the establishment of more schools, and an enlargement of aid to low-income students while requiring self-help from all students.[8] To the states the council urges: support of private education through need-based tuition scholarships, encouragement of innovative programming and discouragement of highly specialized new programs, exploration of interstate cooperation for highly specialized areas, and maintenance of "at least the current level of per-capita funding of higher education in constant dollars."[9] Specifically, it is suggested that where student enrollment is declining, there be a cut in funds of only 0.6 to 0.8 for each 1.0 decline in FTE.[10] Also urged is an *increase* of funding in those states below the national average — even when a decline of students is the most likely prospect.[11]

These policy recommendations need to be addressed along with the larger question of our academic institutions' moral integrity. Wherein is the source of wisdom that will stay institutions against the sway of market pressures, consumer sovereignty, and the mounting pressures to focus on vocational training? How many institutions will bear responsibility for the deteriorating quality of academic work (even during pre-college years)? How many will achieve balance between the humanities, the laboratory and social sciences, the performing arts and professional education, by resisting *ad hoc* market pressures? What kind of vision and integrity is necessary to counter the false promises of many institutions (resorting to rank hucksterism and "instant degree" programs) and deceit in the use of public monies? For example, of $3.6 billion disbursed for federal student aid programs, $356 million (9.9 percent) was lost through fraud and abuse.[12] These, in brief, are the national prospects, with some council recommendations, and a few dilemmas for higher education in the United States. While not a doomsday profile, the national scene reflects more gloom than boom. None the less, a view of regional and institutional differences provides reason for selective optimism.

A Regional and Institutional View

The Carnegie Report categorizes various types of institutions according to their relative vulnerability because of declining enrollment:

1. **Least Vulnerable**
   - —Research Universities[13] with strong service functions and professional schools
   - —Selective Liberal Arts Colleges — especially those with high entrance requirements which could be liberalized.
   - —Community Colleges except where "Proposition 13" type legislation renders them vulnerable — as in California where enrollments decreased 10 percent. An additional factor which could negatively affect these commuter institutions is restriction of gasoline supplies.
2. **In-Between Vulnerability**
   - —Doctorate-Granting Universities[14]
     In view of the predicted 50 percent decline in Ph.D. candidates over the next two decades, the vulnerability of these institutions will be determined by the extent to which these are dependent for enrollment on their Ph.D. programs. Since the number of graduate students is expected to rise, many institutions can be expected to broaden their masters' level degree programs.
   - —Comprehensive Colleges and Universities[15]
     Institutions concentrating on teacher education have already been hit hard. Movement toward paramedical training, mineral resource technology, and master's degree programming can help to offset the local declines in population, which is the most controlling factor for these institutions.
3. **Most Vulnerable**
   - —Less Selective Liberal Arts Colleges
     Most of these are in declining population areas of the East and Midwest. These institutions have difficulty competing with lower tuition at public colleges, and they are less flexible in lowering their standards. Though religious, single-sex institutions are identified as most vulnerable, there are many exceptions in this category. In particular, fundamentalist Protestant colleges in the South and colleges in the expanding Southwest are doing well.
   - —Private Two-Year Colleges
     Vocationally-oriented institutions will be less

hard hit in the '80s than the traditionally academic. Some indicators estimate the number of closures of these institutions to be 150 each decade, or 300 by the year 2000.

Allowing for innumerable contingencies, the Carnegie Report suggests the following "comparative shares" of college enrollment changes in the '80s:

EAST	-10 percent	⇩
MIDWEST	-10 percent	
SOUTH	+5 percent	⇧
WEST	+10 percent or more	

The report singles out seven states where enrollment decline will be the least in the nation, viz., Arizona, Utah, Florida, Alaska, Nevada, Idaho, and Texas. Of these seven, no state shows a greater difference between the "tax capacity" and the current "tax effort" of its citizens than Nevada.[16] This means that Nevada could provide greater support for higher education if its leaders and citizens choose to do so. In the following section, some data and recommendations concerning the future of higher education in Nevada will be examined.

The Nevada Connection

What is the future of the Nevada higher educational system in the next twenty years? The Carnegie Report states that some institutions in the South and West "that are now in the second rank academically will make it into the first rank by the end of the century." Both UNR and UNLV are in the former category in 1980, but the right combination of foresight by the state's leaders and kindly smiles from the demiurges of demography can vault these institutions into the front ranks.

One positive factor in Nevada higher education appears to be enrollment prospects for each institution. According to the Carnegie Report, Nevada's potential for enrollment growth in post-secondary and higher education institutions is fifth highest in the nation with respect to the traditional 15-24 year-old population. The national average is projected as a 16.4 percent decline in this population during the coming decade and an 18.5 percent decline by 1995. Nevada is projected as more than 12 percent *above* this average, which would represent a net decline of 4.3 percent in this age group of students. Nevada, however, has the second largest percentage of growth from in-migration in the nation.[17] The average age of Nevada university and community college students is in the mid-twenties and promises to rise.[18] Add to this the attraction of Nevada's tax structure, the Chamber of Commerce projection of up to 21 percent population increase by 1990 and an optimistic high of 78 percent by 2000 and we have the ingredients for at least a projected 7 percent net *increase* in student enrollment by 1990.[19] This modest enrollment growth projection receives strong reinforcement from the 1980 fall enrollment which was up more than 5 percent over that of the 1979 increase; some professional schools at UNR reflected 1979 enrollment increases as high as 15 percent.[20]

One unfactored imponderable for Nevada is the potential impact of the MX missile on the state. If the MX missile site is located in Nevada, this state will experience a temporary increase in its population during years when much of the nation is suffering a decline.[21] Another variable which only stockholders and gamblers are willing to bet on is the price of gold and silver. Should these prices continue to rise during the next two decades, we can expect ghost towns to rise from the tailings. If increased activity on the part of private industry and on the federal government should draw more people to Nevada, a collection of short-range programs would have to be adopted to meet the educational interests of this new population.

If such programs were funded, the universities within the state should, perhaps, be prepared to offer general degree programs in the rural counties.[22] Internally, these institutions need to work out a consistent and non-competitive policy of offering "resident" credit outside their campus boundaries. If they do not, they can expect institutions from outside the state to capture any new post-secondary education market. Nevada political leaders who are unwilling to allocate more of the state budget for higher education might find themselves inadvertently promoting the entrepreneurship of other institutions of higher education within the state.

In a sober but upbeat chapter on the "World of the Future," the Carnegie Council raises concerns as well as optimistic predictions about the future. The "unfinished business" of higher education which should be accomplished by the year 2000 includes participation at the highest levels of academic life of the most able persons regardless of race, sex, and family income. The goal of universal access, i.e., the availability of post-secondary education "within community distance" to all populated parts of the nation offers unique problems for rural Nevada.[23] The community colleges are partially meeting this need. Also, the first steps have already been taken to link rural areas to the existing centers of post-secondary education by telephone through the UNITE system (University of Nevada-Reno Interactive Teleconferencing for Education; see Dickens' paper in this collection). Educational visionaries and media wizards would like to expand the system to permit the equivalent of a low-cost educational television station in every rural Nevada community via satellite. Such innovative ideas will never hatch without appropriate funding and changes in those attitudes often found among faculties and others who view traditional classroom teaching as the only acceptable medium of education. High academic quality of telephone and television instruction in the rural areas will also require enlargement of local library holdings, which would ultimately serve the student and non-student populations.

If the state makes the fundamental choice to raise the quality of education statewide at all levels, the role of the universities and community colleges may be to do more work with high school instructors, as has been done by the University of California, Berkeley.[24] The goal of this cooperation would be to raise the basic skills of all students. Modest though it may sound, Nevada should have as its goal for the year 2000 a return to the academic quality level of 1960 in the achievement capacity of its students.[25]

The Carnegie Council challenges institutions to make adaptations compatible with the academic standards and community character of each college.[26] Nevada is a 24-hour state. Its institutions might consider course offerings in hotels and casinos, as well as more weekend and evening courses. But how does the University of Nevada System reconcile this 24-hour, seven-day-a-week need with up to an 81 percent increase in some fuel costs in 1980? Financial considerations could easily dictate a shutting down of the energy plant after peak weekday and daytime uses, which would work against a more flexible schedule.

As this monograph goes to press, all segments of the Nevada post-secondary education system are submitting master plans for the next decade. It will be instructive to observe where programs are being adjusted to meet new educational exigencies. Will there be a decrease in the already small number of doctoral programs to focus on a few which promise national excellence? Will there be a corresponding increase in masters programs to meet short-term demands of a vocationally-oriented population? In all of this a heavy burden will be placed on administrators who can discriminate between "managing for excellence" and "managing for survival." Our institutions of higher education are facing issues beyond those of survival, for they are called to a global perspective that challenges the parochial limits in much of Western higher education.[27] They are also called to promoting a humanistic use of the new electronic technology and a responsible method for determining the most important areas of research, along with trying to recover a justification for learning that transcends marketable skills.[28]

Solomonian wisdom will be needed if our academies are to make the economic and programmatic adjustments dictated by the new demographic pressures. Like most institutions, higher education finds it easier to manage overall growth than retrenchment of some areas and reallocation of resources to others. The stronger "research universities" will have the luxury of more options in the difficult policy choices — if for no other reason than the capturing of many large grants and contracts.[29] Management and governance authorities in the Nevada system will be hard pressed to be both responsive and responsible in what would appear to be continued state population expansion and growth of enrollment in higher education.[30]

The extent to which Nevada government will fund the University System will be an important determinant in the quality and expansion of higher education in the state. For 1980-81, Nevada ranked 31st in state appropriations per capita, 17th in percent-increase of funding over 1978-79, 6th in percent-increase of support over the past ten years (largely because of community college growth), 43rd in appropriations per one thousand dollars of personal income per capita, and 47th in gross expenditures for higher education. In short, while state funding for post-secondary and higher education in Nevada has expanded greatly during the past decade, Nevada's position nationwide and in relation to other, less expanding western states is very low.[31] As one of the three fastest-growing states in the Union, Nevada's educational future will rest in part on the importance which policymakers and the people place on the values of higher education.[32]

The Carnegie Report has analyzed national trends and framed the managerial options in a context within which responsible action may be exercised in the next twenty years. The implications for the state of Nevada present a sobering view of the grand and fragile prospects to be faced by the new generation of administrators in the University of Nevada System.[33] In the midst of all the Carnegie Report graphs, statistics, demographic maps, and policy projections, Nevada political leaders and educators should note a sparkling quotation from Hegel: "Hell is truth seen too late." The Carnegie Council document is a powerful resource for all who will play some role in determining the future health of higher education in this state. The report encourages the view that our destiny is not just a matter of fate or market determinism. Nevadans have reasons to be optimistic about the future of higher education, and to bring both passion and imagination to the nourishing of one of the most remarkable creations of the human spirit, higher education. Let us recognize this truth before it is too late.

Footnotes

[1] Carnegie Council on Policy Studies in Higher Education. *Three Thousand Futures: The Next Twenty Years for Higher Education*. San Francisco: Jossey-Bass, 1980. The volume is available from the Carnegie Council on Policy Studies in Higher Education, 2150 Shattuck Avenue, Berkeley, CA 94704 (Hereafter cited as *Three Thousand Futures*.)

[2] *Ibid.* p. 31.

[3] *Ibid.* p. 14-28.

[4] *Ibid.* p. 45.

[5] *Ibid.* p. 42-44, 50. The present rate of growth of Hispanic population in Nevada is estimated at about 10 percent per annum. The 1980 base of Hispanic population is estimated at about 70,000 statewide.

[6] *Ibid.* p. 89-95.

[7] *Ibid.* p. 94.

[8] *Ibid.* p. 132.

[9] *Ibid.* p. 131. Also, see James Richard and Donald Jessup, "The History of Formula-Based Budgeting for Nevada Universities," in this collection.

[10] *Ibid.* p. 121.

[11] *Ibid.* p. 120, 131.

[12] *Ibid.* p. 100, fn. #4. Also see Barry Mitzman, "Big Student-Aid Mistake at University of Washington Leaves Confusion, Questions," in *Chronicle of Higher Education*, September 22, 1980, p. 3.

[13] The classification of "research universities" is limited to the top 100 institutions leading in federal financial support and the awarding of at least 50 Ph.D.'s in 1973-74. *Three Thousand Futures*, p. 203.

[14] The University of Nevada, Reno, qualifies in the second rank of "doctoral granting universities," having granted between 10 and 20 doctorates in more than three fields. *Ibid.*, pp. 203-204. In 1979-80 UNR conferred 5 Ed.D.'s and 12 Ph.D.'s in Chemistry, Biochemistry, Psychology, and Physics.

[15] The University of Nevada, Las Vegas, while enrolling nearly four times the number of students required in this category (2000), conferred seven Ed.D.'s in 1978-79 to fall short of the condition for a "doctoral-granting university." Owen Albert Knorr, "Enrollment Trends and Selected Institutional Characteristics," Office of Institutional Analysis, UNLV, (1978-79), p. 33 and *Three Thousand Futures*, p. 204.

[16] The national index for "tax capacity" and "tax effort" is 100. Nevada's "tax capacity" is +51 (the highest in the nation in 1975), while its "tax

effort" was -30 (second lowest in the nation) in the same year. *Ibid.*, pp. 67-70.

[17] *Ibid.*

[18] Cf. Knorr, "Enrollment Trends . . . ," *op. cit.* p. 8.

[19] Memorandum: Owen Albert Knorr to Richard O. Davies (Academic Vice President, UNR), Reno, September 16, 1980.

[20] Memorandum: Owen Albert Knorr to Richard O. Davies, Reno, October 20, 1980.

[21] Memorandum: Pamela Cosby and Robert Levin [MX Project Field Office], Carson City, to "All Interested Parties," October 7, 1980.

[22] The University of Nevada, Reno, receives a "Rural Equalization Fund" of $50,000 to allow fewer students per class in the rural areas than the regular state-funded formula. The University of Nevada, Las Vegas, has no such equalization fund, but it generally includes off-campus course enrollments within its regular FTE — which UNR cannot do under the present funding arrangement.

[23] *Three Thousand Futures, op. cit.* p. 136.

[24] *Ibid.* p. 99.

[25] The overall national decline in the Scholastic Aptitude Test (SAT) scores is well known. See *Ibid.* p. 98 and James W. Wickenden, "How the SAT's Are Used — and Sometimes Abused," in *Chronicle of Higher Education*, September 29, 1980, p. 26 for a corrective on the traditional usage of the SAT.

[26] *Three Thousand Futures, op. cit.* p. 101.

[27] Robert E. Marshak, "Focusing Applied Research on Global Problems," *Physics Today*, (November, 1979), pp. 9-13.

[28] The Carnegie Council urges that the arts and humanities not be jeopardized by market pressures. The recommendation is based on studies showing that alumni consistently state they wish they had done more course work in the humanities. See *Three Thousand Futures, op. cit.*, p. 99.

[29] Institutions are permitted to recover a percentage of grants and contracts to cover administrative overhead costs. Such overhead monies may be used to help offset the cost of new courses required by increased enrollment. Regrettably, no Nevada institution meets the requirements established by the Carnegie Council for "research institutions" (see footnote 13). However, UNR did in 1978-79 receive twelve and one-half million dollars from government and private grants and contracts, and UNLV received nearly four million during the same time period (HEW Higher Education General Information Survey, 1979).

[30] This is especially the case since tuition derived from increased enrollment may revert back to the state treasury, if enrollment exceeds projections incorporated in the biennial budget authorization approved by the legislature. This policy of requiring state government's permission to spend such "excess revenues" makes a difficult situation even more problematic.

[31] *Chronicle of Higher Education*, October 14, 1980, pp. 7-10. Also see Owen Albert Knorr and Kari C. Coburn, "Support for Higher Education," in this collection for further refinement of these data — particularly as Nevada is related to other western states. Also note an error on p. 406 of *Three Thousand Futures* incorrectly placing Nevada 3rd in percent income in total support for higher education from 1971-72 to 1976-77. In fact Nevada was tied with two other states for 27th place in this category.

[32] See *Three Thousand Futures, op. cit.*, pp. 219-237, for a discussion of these values.

[33] Four of the six presidents in the University of Nevada System have served less than two years in their positions; both vice presidents for academic affairs at the two universities were hired in 1980.

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The State of the University: UNR in 1980

by Joseph N. Crowley

Thinking about higher education's future has been a popular pastime recently. The dawning of the 1980's has produced a spate of literature telling us what life will be like for American colleges and universities during the decade ahead and looking beyond that period as well to the 21st Century. The accent in these projections is not, on the whole, very positive. There is much discussion of harsh economic realities, of a decline in research, a diminution of independence, a breakdown in governance; of standards falling in a desperate search for new students; of overtenured faculties growing old and stagnant; of doomsdays and dark ages across the educational landscape. Underlying this unhappy set of prospects is a demography of lowered birthrates, decreasing numbers of high school graduates, and shrinking college and university enrollments.

These projections, despite their generally negative character, are very diverse and full of qualifications. Perhaps their authors remember earlier predictions that the American university of 1980 would experience a great expansion in student numbers and a continuing shortage of faculty members. In Nevada, we were informed in a 1969 report that UNR and UNLV could each look toward an F.T.E. student population in excess of 10,000 by 1979, at which time a student-faculty ratio of 20 to 1 would become appropriate. UNR was at about 6,900 gross F.T.E.'s last year, but 20 to 1 was adopted by the state the year after the report was issued. That action made it difficult during the past decade to develop new programs and to add needed positions in existing programs. Caution, in light of these previous predictions, would seem to be in order.

As for diversity in the contemporary projections, one can find in this burgeoning literature a basis for anticipating as much a bright future as a dim one. It may depend very much on where one lives, on the economy and demographics of the state in which a university is located. Even here, the prospects are hardly clear. There are studies, for example, that show Nevada variously increasing in numbers of high school graduates and likely university enrollees, decreasing somewhat marginally in these categories, and holding its own. A recent Carnegie Council report, *Three Thousand Futures,* perhaps the most authoritative of these several publications, foresees Nevada as one of only seven states with a truly *encouraging* demographic future *(Editor's note: see Marschall and Johnson paper in this collection).*

As we begin the new decade, therefore, we can look ahead, as someone has deftly put it, to either gloom and doom, or boom and bloom. In the face of this uncertainty, and in spite of the vagaries of economy and demography, we can find ample reason to take on the '80s as a time of challenge and opportunity. In the UNR administration, the creative juices are running. We are excited about the possibilities. We believe there is a future to conquer rather than surrender to, and we believe we have a faculty ready and willing to join in the campaign. I do not know where this university will be in 1990 or the year 2000. I believe strongly that wherever we are, it will be substantially because we put ourselves there, because we did much to forge out own destiny. I believe also that, although we have behind us a decade with its share of disappointments, in which our financial support did not match our ambitions and our possibilities, we are a stronger, better institution in 1980 than we were in 1970. That trend, I am confident, can continue.

If we cannot say specifically what is in store for us during the next 10 or 20 years, we can speak with some confidence about things to come in 1980-81.

Last year, at about this time, we were looking at the prospect of significant reductions in instructional faculty. With the assistance of the Board of Regents and the Governor, and with the aid and cooperation of the legislature's Interim Finance Committee and its leadership, the university received additional funding sufficient to cancel those reductions and to permit us to add a few faculty positions in areas of critical need. That welcome development was made possible by an F.T.E. enrollment increase in 1979-80 approximating seven percent, occurring after a three-year period of moderate FTE enrollment decline. Fall semester FTE figures indicate an increase for the current year of about the same magnitude as last year's. Indeed, it appears that this year's enrollment will be the highest in the university's history, surpassing the previous peak year of 1975-76. As we begin the job of winning support for the university's budget request for the 1981-83 biennium, the enrollment news is encouraging.

Recently, the Board of Regents acted favorably on the budget request. In the basic UNR budget, we are asking for an increase of 24 percent for the first year of the biennium and 15 percent for 1982-83. The bulk of this increase is tied directly to inflation. In that regard, the *highest* budgetary priority for both the administration and the regents is in the area of faculty salaries. The budget request includes funding for a 15 percent salary increase each year, covering both merit pay and inflation adjustments. (This figure is subject to modification up or down as more current information on changes in the Consumer Price Index becomes available.) There will be a separate request for salary money which, if approved, would permit faculty to catch up with inflation-related losses experienced during the current biennium.

The budget proposal approved by the board also includes funding to cover some part of the losses sustained in real operating dollars for the 1979-81 period and to take care of anticipated inflation in this area during 1981-83. The remainder of the budget, comprising about one-quarter of the requested increase, looks toward moderate but sorely needed growth in faculty, classified, and graduate assistant positions in accordance with a conservatively projected enrollment increase of three percent for each year of the biennium. In another separate request, we will be seeking support for major equipment purchases and for the concept of amortization and replacement costs of obsolescent equipment. One area where we are growing rapidly is the area of obsolescent — and obsolete — equipment, simply because the very tight financial picture of the past decade has not allowed enough funds to purchase and maintain badly needed equipment. The budget request, in total, is a conservative and fiscally responsible document, based firmly on demonstrable need and assembled with the active involvement of faculty committees, departments, schools and colleges of the university.

Preparation of the budget has consumed much time and effort over the past year, but there have been developments of consequence elsewhere as well. There have been too many to detail here, but included in their number would be the following:

1. Planning and implementation of a novel program utilizing College Work Study funds to help implement an approved increase in graduate assistant stipends and to add to the complement of graduate assistants available to both instructional and support components of the university. This program, suggested initially by Bill Rasmussen, Director of Financial Aids, did not proceed to fruition without considerable pain and frustration and occasional skepticism and recalcitrance. But it did succeed, and that is a matter of particular import to our graduate programs. Graduate enrollments have continued their steady growth here. The number of state-appropriated graduate assistantships, on the other hand, was reduced by 25 percent for the current biennium. Until this year, our assistantship stipends were among the lowest in the western states. The College Work Study plan has helped provide some welcome relief by supplementing available funds.

2. A task force chaired by Professor Richard Burkhart of the UNR Chemistry Department prepared an excellent report on the status of graduate education at UNR. This report, presented recently to the Board of Regents, includes an informative history of graduate education at UNR, a solid analysis of the critical ties between graduate and undergraduate education, and between graduate programs and research. It also examines the manifold public service benefits yielded by our graduate research efforts. The report is a major step forward in the essential task of explaining to decision-makers and the general public why strong support for graduate programs is essential for the university and therefore for the state. *(Editor's note: see the Burkhart paper in this collection for more detail.)*

3. This spring, we established with the approval of the Board of Regents a Foundation Fund Board which will become the principal vehicle for private fund raising for UNR. The board is comprised of community leaders in business and the professions. It will soon include members from outside as well as inside the state. We have ambitious plans for this board; it is hoped that its creation will lead ultimately to the establishment of a University Foundation, which would be a major milestone in private fundraising for UNR.

4. While there are probably a few additional reorganizational initiatives still to be accomplished, the bulk of the work has been done. We were due for some changes in our administrative structure, which had accumulated offices, functions and responsibilities in a sometimes ad hoc and inefficient fashion over the years. It is a more streamlined and rational structure, including a more functional and effective approach to committee organization, and favorable results are already evident.

Those are a few of the more significant recent developments which help set the stage for what we hope to accomplish during 1980-81. Some of these hoped-for accomplishments include the following:

1. *Master Plan.* During the fall of 1980, we will be calling on the faculty to participate extensively in the development of a 10-year Academic Master Plan for the university. This is not the first such effort to be undertaken here. Previous plans have produced rather limited results, and the current undertaking will be greeted with a certain skepticism in some quarters. However, we are very serious about this plan. The perils and promises of the '80s require us to be serious about planning. We must look upon the Master Plan as a true blueprint for our future, as a design for excellence and not simply for survival, as a credible and realistic document that incorporates hard decisions about our intentions and priorities. It cannot be an exercise in pure rhetoric, an easy extension of previous plans, or a squinting view of the pie-in-the-sky. It must be a plan that clearly sets forth goals for expanding the scope and improving the quality of our educational offerings, that is anchored in data and analysis of needs, trends, constraints, resources, and opportunities, and that includes a strategy for implementation and updating.

Henry M. Wriston observed that planning is a good thing, but cautioned that "if you see an opportunity, put the plan on ice and seize the opportunity."[1] We intend that this Master Plan will be a working document, providing a basis for reasoned, periodic evaluation and a process to continue the planning effort. We do not approach the development of the plan with thoughts of future icing or shelving. We do not want the plan to end up gathering either frost or dust. We want it to allow for the seizing of opportunities, because opportunities will surely present themselves.

It is a plan to be assembled from the ground up, beginning with the departments, proceeding through the schools and colleges and eventuating in a university-wide committee that has already been appointed. There will be a period and a mechanism for review and comment once the initial draft is completed. Much effort from many people will be required to make the Master Plan the successful venture it needs very much to be.

Two related projects are also under way which will inform and complement the Master Plan. One of them, a Comprehensive Development Plan, will yield a set of priorities for expenditure of the substantial private funding we hope to realize during the next two years. The deans have been asked to supply lists of the top priorities for their colleges that will need to be met primarily with private dollars. A task force will shortly be involved in sifting through these priorities and developing the plan. Steve Harrison, the Director of Development, has put together a set of categories and a systematic strategy for the fund-raising drive and this drive, again, will be coordinated through the Foundation Fund Board. It is an ambitious project which is off to a good start with a number of significant contributions from members of the board and others and, particularly, with a generous gift of $10,000 from the UNR Alumni Association.

A second project, feeding into the Master Plan but important in its own right as well, is a faculty workload study now being assembled by a committee under the chairmanship of Professor Jerry Edwards, of the History Department. This study was requested by the Board of Regents. It is intended to produce information and recommendations through an analysis of teaching, research, and public service requirements and relationships, lower and upper division and graduate program responsibilities, and differentiated workloads among the departments and colleges. This study gives us an opportunity both to explain our complex professional responsibilities to decision-makers and to forge a policy to guide and make equitable the assignment of workloads in the future.

2. *Faculty Development.* Faculty development is one of those ideas with great contemporary rhetorical currency but, thus far, with relatively little concrete application. Last spring, through the dedicated effort of a committee led by Professor Jim Hulse of the History Department and with private funding support and the assistance of the Nevada Humanities Committee, the university sponsored a series of conferences on the Crisis in Values in Higher Education *(Ed. Note: See the Hulse paper in this collection which is a report on the conference).* A year earlier, the university hosted the Guy Leonard Memorial Conference in Philosophy, attracting scholars from around the world. This conference, a milestone event for UNR, was accomplished through the efforts of Professor Tom Nickles and his colleagues, with funds supplied by Guy Leonard's parents, Paul and Gwen Leonard. Mr. and Mrs. Leonard, with the help of other donors, have assured through additional contributions the continuation of the conference in future years. This year, the College of Business Administration has inaugurated a major speaker series, an annual event sponsored by Harrah's.

It is clear that we need to expand our activities in this area, to profit from these examples, and to generate a variety of approaches to faculty development. The Comprehensive Development Plan is certain to give faculty development a high priority, and we are in the process of pursuing some other sources of funding support for development purposes. The university's major capital investment is in its faculty. In an era when the expansion of knowledge continues unabated, even as professional mobility is increasingly more limited and the prospects for recruiting younger faculty are less than promising, that investment must obviously be protected.

3. *Student Services.* This subject encompasses a wide spectrum of needs, of which only a few of the more pressing ones are noted here. Our advisement system is not functioning as well as it should. For the past year, a university committee chaired by Professor Don Tibbits of the Biology Department has been studying this matter and its recommendations are being studied. The College of Arts and Science has commenced an experimental advisemenet program of considerable promise. Other avenues toward revising and revitalizing the system will be explored this year. Changes must and will be made in this area and we need also to look at other aspects of the student retention problem. Dean Roberta Barnes and her staff will continue to be the focal point for these activities.

There has been some progress of late in expanding the university's course schedule to provide more offerings in the afternoons and evenings. More needs to be accomplished here. This is a complex matter, but with the opportunities presented us by the new computer registration system and with a detailed study of scheduling needs we should be in a position to make significant changes by the spring of 1982.

We will also be examining ways of better fulfilling our obligations to rural Nevada. We have in place the UNITE teleconferencing system, which makes it possible to increase our course offerings in rural communities. It can also be used in the faculty recruitment and interview process and for a variety of other purposes as well. We can and should make greater use of that system. We intend also to continue to explore the possibilities for adding a video component to the system. Under its director, Dan Tone, the Office of Communications and Broadcasting has nearly completed a federally funded study on the prospects for public television in Northern Nevada. The study will propose a creative partnership of communities (allowing, for example, each community to have its own television station at a modest cost), school districts, the university and the private sector in a technologically innovative and economical plan which would not only provide a vehicle for expanded course offerings but would also open up a universe of other possibilities for higher education.

Finally, with regard to our rural responsibilities, we hope to refine a proposal, previously and favorably reviewed by the Faculty Senate and Academic Council, for the gradual incorporation of off-campus courses into regular teaching loads. Again, this is a complicated matter and progress will perforce be slow, but the process of implementation should be started this year.

There is one other objective in the broad area of service to students, perhaps the most important objective, which will require much attention during 1980-81. It is no news that the writing abilities of our students have sadly deteriorated. This is a grave and urgent problem. It is also a university-wide problem which will require a university-wide effort at solution. The university has made a start toward solution with the establishment of an Arts and Science Advisory Board special subcommittee on writing skills, and the convening this summer, through the good offices of Professor Elizabeth Francis, Director of Freshman English, of a writing workshop attended by representatives of several colleges. But we have a long way to go. This is a problem which needs to be addressed in the Master Plan and in our presentation to the legislature.

4. *Public Relations.* The coming year will see an intensification of the university's effort to bring its messages to the people of Nevada and our constituencies elsewhere. Alumni Director Parker McCreary will be putting into place a computerized alumni records system that will permit us to establish contact with the thousands of former students at UNR with whom we have lost touch. The Alumni Office, under the guidance of President Betty Jo Lunt's Alumni Council, has succeeded recently in organizing Alumni Chapters in San Diego, Las Vegas and Winnemucca and in developing closer ties with the long-standing chapter in Los Angeles. That effort will be continued this year.

The university in recent years has been involved in the production of four news publications — the alumni magazine, the *UN Reporter*, the *University Times*, and the *Summer Times*. All have been worthy ventures, but they have often reached the same audience with similar stories at different times. All that work will now be consolidated into a single, high-quality publication to be produced in 12 annual issues by journalism students, working with a professional publisher, under the guidance of a university-wide editorial board and reaching an initial readership of 27,000 people. This will be made possible by the cooperative energies, including financial support, of the Alumni Council, the Office of Information (whose director, Terrie Nault, proposed the idea), the Office of Continuing Education, the Department of Intercollegiate Athletics, the Department of Journalism, and assorted private contributors.

The Office of School Relations, directed by Cecelia St. John, has made dramatic strides forward in familiarizing high school students with the programs available at UNR. For the past two years, this office has also coordinated comprehensive summer recruitment campaigns. We will be building this year on the solid foundation established through these successful initiatives.

There will be other evidence available in the months to come of the university's improved public presence. KUNR, the campus radio station, is in the process of considerably expanding both its range and its listenership and this year will very likely be recognized as part of the network of stations comprising National Public Radio. Secondly, most colleges have created citizen advisory boards by this time. These boards are valuable avenues toward the advancement of public understanding and support of the university. And, thirdly, on a small but important point, we expect to adopt shortly a university logo and commmon letterhead to replace the dizzying and multicolored variety of stationeries we now employ to communicate and confuse the university's public image.

5. *Institutional Studies.* A key to many of the endeavors described above will be the ability to support them with institutional research and analysis. The Master Plan, as noted, will need this kind of undergirding, as will workload, retention and scheduling studies. To furnish this vital assistance, an Office of Institutional Studies was established as part of the administrative reorganization. We are very fortunate to have hired recently as Director of this office Dr. Al Knorr, whose background in this area is most impressive. We should be aided as well by what seems likely to be an improved equipment capability at the Computing Center. Given these favorable circumstances, we look forward to the development of a much-needed management information system. We will also hope to generate some analytic strategies for enhancing accountability to the university's various publics and some alternative approaches to the outdated funding formulas now applied to university budgeting.

We have other projects in mind for 1980-81, including some additional reorganization (to provide, for example, a more consequential role in policy-making for the Academic Council), some further refinement of the committee structure, the initiation of an effort to remove duplication and excess from our curricula, the establishment of a coordinated space management policy, a review of the university's affirmative action program, looking toward a greater concern with the substance of that program, and the development of a policy to provide stability and predictability in regard to scheduled summer session courses.

In addition, the administration, the Department of Intercollegiate Athletics, and the Intercollegiate Athletics Board will be working out a mechanism to assure the academic progress — not the eligibility progress — of student-athletes, and assembling a plan for the growth and improvement of the women's athletic program.

There will also be several new buildings beginning to take shape on campus this year — the Business building east of the Library, the new Mackay School of Mines on the Northeast corner of the Quad, the Special Events Center southwest of Mackay Stadium, and the Medical School Phase IV building.

Finally, for the first time in 11 years, with a very limited amount of state funding and considerable financial support from private sources, UNR is fielding a marching band, directed by Professor Mac McGranahan. The band should help us begin the academic decade of the '80s in a spirit of harmony.

A Master Plan. A Comprehensive Development Plan. A Workload Study. Faculty Development. A variety of student services programs, public relations efforts, and institutional research projects. Those are among the major goals of the administration for the year ahead. Along with the other initiatives alluded to, they make for a tall order. We shall have to live, of course, with the unexpected. Proposals and problems will present themselves without proper notice and demand to be accomplished and resolved. Priorities may change as events dictate. A few of the objectives we now intend to work toward may be postponed in favor of others. Opportunities will have to be seized.

The administration will certainly be involved in the pursuit of individual college goals. One example would be the consolidation and solidification of the School of Medicine's relationships with the Washoe Medical Center and initial work toward the establishment of cooperative graduate offerings involving that school and other campus departments. Others include the development of the Gund Ranch and Jones Ranch properties in conjunction with the College of Agriculture, the laboratory needs associated with the opening of the new Mines building and the improvement of continuing education programs in Nursing. The search for appropriate space in which to house a university museum is a subject of interest in several colleges. These and other college objectives will be given attention during the coming year, and they will make the year's order taller still. Complicating and affecting all these matters will be the deliberations at the 1981 legislative session.

Still, I believe that we can make significant progress towards accomplishing the goals described. I believe we can because, though the financial and other resources they will need are uncertain, the major resource they require is not. That resource is the ability, intellect, creativity and energy of the faculty.

Difficult questions will be asked of American higher education in the 1980s. They will need to be answered. We will need to justify ourselves, to demonstrate that public and private investment in higher education is not simply desirable but essential. Given the demographic and resource situation as it is currently understood, prospects for colleges and universities in the decade ahead may not appear to be especially encouraging. But at this point, those prospects are only apparent. The reality is in large measure ours to define. In Nevada, with a strong and growing economy and an increasing population, the 1980s can be a decade of singular progress for higher education. We will need to make that happen as well. If we can achieve our major objectives for 1980-81, we will have taken some major steps in that direction.

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Footnote

[1] M.M. Chambers, "Higher Education's Future: Much Brighter Than You May Think," *Chronicle of Higher Education,* V. XXL, No. 1, Aug. 25, 1980, p. 72.

Dr. Crowley is President of the University of Nevada, Reno. He joined UNR's Political Science Department in 1966 and became department chairman in 1976, a post he held until his appointment as acting president. Crowley earned his B.A. in political science from the University of Iowa in 1959, his M.A. in social science from Fresno State College in 1963, and his Ph.D. in political science from the University of Washington in 1967.

Strategies for the Eighties:

Undergraduate Education for Tomorrow's Leaders

by Richard O. Davies

The basic question confronting higher education as it moves into the 1980s can be easily posed: "Education for what?" How best can we educate our students to deal with what will most certainly be a lifetime of rapid and continual change in the political, economic and social structures of our nation? How best can we design the curriculum to prepare them for this uncertain future? How best can we provide a quality faculty to teach them? The dilemmas we confront as we attempt to provide a meaningful educational foundation for our diverse college populations are not given to ready answers. The 1980s require that we devise educational strategies to equip students with the intellectual and technical skills necessary to cope with an increasingly demanding world.

We cannot accurately predict what the future will bring, but there can be no questioning the basic premise that technological and social change will alter many of our basic values and social systems. A cursory review of the past fifty years assures us that we are currently swept up in far-reaching and rapid changes in our culture. Prominent futurists, such as Herman Kahn, Robert Theobald, and Alvin Toffler, might disagree upon the form which the future will take, but they are unified in their assessment that the next several decades — whose leaders we are currently educating — will bring swift and dramatic change. While Kahn and his Hudson Institute associates project an affluent, "surprise-free, post-industrial" society, which will be marked by the successful harnessing of new forms of energy, the prestigious Club of Rome has delivered a gloomy prediction about our approaching the "limits of growth," which will bring with it a steady deterioration of our current civilization marked by massive shortages of food and energy. Toffler's projected "third wave" is neither pessimistic nor optimistic, but he does forcefully project far-reaching changes in the way in which we will live and work by the year 2000. His conclusion is that we are living in an epochal time of change from the industrial era to a new civilization not yet precisely defined, and that change is occurring at an ever-accelerating rate.

While we face many imponderables in considering educational programming for the eighties, it is refreshing to note that the leadership of a much earlier era had no such doubts. In 1701, the President of Yale College proclaimed simply that he would preside over an institution "wherein youth may be instructed in the arts and sciences, who through the blessing of Almighty God, may be fitted for public employment, both in Church and civil State." Harvard, not to be outdone by its younger rival, prescribed that "Every one shall consider the Mayne End of his life & Stydyes to know God & Jesus, which is Eternal Life."

These educators certainly knew where they were and where they were going. Not so today. Curricular design has led in many and confusing directions. Few intrepid souls have the temerity to develop fresh approaches to the heart of a college education — the liberal arts and sciences "general education" component. The landscape of higher education is strewn with the wreckage of past reform efforts; today, many faculties cannot agree upon whether even a minimal core set of graduation requirements should be established. On one hand, some universities have all but abandoned the field of liberal education, leaving the student with the responsibility for designing his or her own program. Yet, conversely, at no less an institution than Harvard University, which opted for an open elective system during the 1960s, the faculty has recently reversed its position and established a new set of "core" graduation requirements. Already, however, rumblings of discontent about this much-publicized "core curriculum" have been emanating from Harvard Yard.

The basic problem is that we must live and teach in an extremely complex, diverse and pluralistic society. The condition of our society, with its many conflicting demands, is reflected in the curriculum of our universities. College faculties are being pulled simultaneously in many different directions. The general state of confusion about curricular design is a predictable result of the shifting and conflicting demands being placed upon higher education, especially *public* higher education, by various segments of society.

What is needed, of course, is the development of a healthy balance between the technical and professional aspects of higher education and the traditional arts and sciences. Although few responsible academicians would admit it, they have allowed over the past two decades a steady deterioration and delimitation of the liberal education component of the curriculum. Many powerful pressures have tended to undercut the traditional liberal arts and sciences: increased demands by professional societies and faculties for additional technical courses; a new attitude of "consumerism" prevalent among both students and their parents, who equate an education with job placement; and a growing anti-elitism in American society which continues the assault upon intellectual standards and values. As historian Frederick Rudolph observes,

> The education of leaders is denigrated as elitist, and liberal learning is attacked as useless and aristocratic. The beneficiaries and popularizers of mass education have set them-

> selves up as the enemies of elite education, and the advocates of career education have made a target of liberal education. They come among us as friends of democracy, but they are in fact the ultimate barbarians, tearing away at the institutional supports of a humane and ordered society. The country suffers, and our colleges are at bay.[1]

Thus the basic dilemma: how can we best train a leadership for a society in which advanced technical knowledge and skill will be essential, but one in which enduring human values will be needed even more than in the past? Just as the future will demand of Americans flexibility and abilities of adaptation, so too must we as educators be flexible and open in our search for new solutions. The defenders of traditional liberal arts programs must recognize that those programs were designed to prepare individuals for living in the 19th and 20th centuries. We must accept the fact that we now must develop a liberal education for individuals who will reach their most productive years in the 21st Century! We must address ourselves to the creation of a liberal education to meet the challenges of Toffler's Third Wave of Civilization. This is not to say that many of the traditional liberal education concepts are no longer valid, but it is to say that we must test them against the new challenges we face in preparing tomorrow's leaders.

Objectives of an undergraduate degree program

What, then, should be the mark of an educated man or woman? What intellectual qualities should such an individual possess? What basic goals and objectives should a university faculty seek to accomplish? Given the conflicting messages we are receiving from the society which pays the bills, and given the philosophical and professional differences which naturally divide university faculties, what should we in Nevada seek to accomplish with the undergraduate student? We need to identify and define the skills and values which that young person will need in the dynamic years which lie before us. I would like to suggest that the following ten minimal competencies be established:

1. *The graduate must be able to communicate effectively.* He or she should be able to express ideas in written form, cogently and intelligently. He or she should also be able to express him or herself verbally in a lucid fashion. The national furor over inadequate (abysmal?) writing skills of many high school graduates, which unfortunately extends to far too many college students, is grounded upon solid data. We must frankly admit that many of our otherwise intelligent students suffer from serious deficiencies in using the English language. Their ineptness with the written word is translated into cliche-riddled and incorrect patterns of verbal communication. It will not suffice to blame the public schools or that villain television. Nor can we saddle the communications faculties with complete responsibility. An intensive and revealing study of undergraduate writing skills at Northern Arizona University, for example, recently indicated that those freshmen students who successfully completed the two-semester composition sequence *could* write correctly and effectively. Follow-up studies of randomly-selected students from all colleges, however, demonstrated that unless this skill was continually reinforced in other clases, it deteriorated rapidly. The conclusion is clear; if we are to expect our graduates to be effective users of the English language, then extensive writing and speaking must be an integral part of most class requirements. Essay examinations, term papers, technical reports, and oral presentations should be incorporated into normal class assignments. They should also be reflected in the grading process. If we do not educate our students about the importance of effective communications, and then *insist* upon such competency, we will have failed them as teachers. This must be a university-wide responsibility. To place the blame for poor communications skills upon the English and Speech Departments is unfair.

2. *A college graduate must be able to understand and appreciate cultural differences.* Americans have come to recognize that their nation is richly endowed with many different ethnic and racial groups; each contributes to the cultural richness and diversity that strengthens our society. A college graduate should have a sensitive understanding of the diverse culture in which he or she lives. Graduates also must be able to understand and appreciate the importance of cultural differences which exist between nations. It is a virtual certainty that such differences will play a fundamental role in the shaping of future world politics; recent events in the Middle East, for example, have forced Americans to reconsider their values vis-a-vis those of other cultures. Narrow racism and rigid enthnocentrism have no place in the value structure of an educated person. There is no single way in which to achieve this educational objective. Courses in anthropology and foreign languages obviously contribute to a broader cultural awareness, as do courses in history, literature, sociology, and art. At this time, I am not prepared to endorse the recent White House Commission's recommendation which would require two years of a foreign language of all college graduates;[2] many students, of course, would benefit enormously from such an experience, but others can achieve the desired result from other equally attractive educational experiences.

3. *A college graduate must have an insight into the nature of the society in which he or she will live and work.* The graduate must have the ability to understand and deal with American society, with all of its inherent complexities and contradictions. Despite an anticipated acceleration in the rate of social change in the decades that lie ahead, many traditional values will remain. The leader of tomorrow needs to be able to move freely and confidently within society, and to understand the conflicts which will be a part of daily experience. Courses in history, literature and art will obviously be of immense value. For the graduate to deal effectively with the issues of political and social analysis, courses in political science, psychology, sociology, and economics, among others, will be important.

4. *The graduate must be aware of the physical and biological world in which he or she lives.* The far-reaching changes being wrought by modern science and technology will dramatically affect the lives of future Americans, just as surely as they have those who have lived in the twentieth century. The leaders of tomorrow must have an understanding and appreciation of the world of science. Students should leave any baccalaureate program with an ability to look at people and their environment with the insights to be gained from the basic concepts of modern science.

5. *The graduate must possess a reasonable familiarity with quantitative reasoning.* Statistical analysis and a mastery of basic algebraic manipulations are an essential part of the intellectual equipment which will be required of an educated person in the years to come. The intellectual discipline instilled by the study of mathematics is sufficient reason in itself for its inclusion in any undergraduate program of study, but courses in college algebra and/or statistics will greatly enhance the quality and value of any students' education, simply because our world is becoming increasingly quantitative.

6. *The graduate must be able to grapple intelligently with ethical problems.* Perhaps one of the real tests of an educated person is the ability to deal responsibly with various ethical questions. Every human being each day must make ethical choices. Perhaps one of the great unseen crises facing future American generations will be issues created by scientific and technological advances; how can we effectively deal with genetic manipulation, gerontological issues and technological and/or societal invasions of individual rights? Recent American history is replete with such dilemmas; Vietnam, Watergate, abortion, environmental protection, and the civil rights movement are ready examples of explosive political issues created by social or scientific change. Our future will be filled with similar, and undoubtedly even more complex, issues. A frame of reference for dealing with ethical issues can be developed in many areas, including literature, anthropology, sociology, and history. However, central to this important endeavor are appropriate courses in philosophy.

7. *Each graduate should leave the university with a solid major which has enabled him or her to learn about a particular discipline in depth.* A "cumulative" learning experience occurs in the major. In many instances, this concentration of learning should either equip students for employment or prepare them for admission to a professional or graduate school. However, it would be a mistake to confuse a major with simple career preparation; the connection is not necessarily appropriate. There are innumerable examples of a graduate from a "non-career" major succeeding in the job market — the intellectual skills and discipline of the mind instilled by a strong liberal arts education can lead to career success.

8. *Students should graduate from a modern university with a healthy appreciation of the computer and modern information processing.* Future predictions about the manipulation of information, and the reorientation of many current professions, hinge upon the wonders of the microprocessor. Not only is the computer drastically redefining the future world of work, but also the home. Home computers now are in place in more than one million American homes; they will soon be monitoring house temperatures, turning on appliances, and providing the bases for new home-based employment for millions. The graduate who is not prepared to use, or at least comprehend, the potentials of a computer, will be at a severe disadvantage in the society of tomorrow.

9. *The graduate must be equipped to deal with aesthetic values.* The student should leave the university with an informed sense of the intellectual and aesthetic experiences present in society's cultural heritage. He or she should be able to read and interpret literature and to appreciate artistic expressions. The college graduate should be equipped to understand the aesthetic and humanistic values of our heritage, as well as to understand and interpret the work of contemporary writers, musicians, and artists. The educated person should be able to appreciate how human beings express themselves in the world in which they live. Obviously, courses provided by the music, art, and literature faculties are essential to this worthy end.

10. *The graduate should be aware of the importance of physical health as a prerequisite for both career and personal happiness.* The university is naturally viewed as the place where students develop intellectual skills for future living. At the same time, however, students should be introduced to the important ingredients which contribute to personal well-being. An appreciation of the relationship of proper exercise and diet to intellectual and professional endeavors will serve the graduate of today well in the years to come. Elective courses in physical education should equip all students with an understanding of the importance to one's well-being of proper exercise and diet. At the college level, if not before, young people need to be introduced to the concept of life-long exercise. The recent trend which has plunged millions of Americans into programs of jogging, weight-training, tennis, walking, racquetball, and fitness swimming is not a fad which will pass quickly. It is here to stay. There should be space in every undergraduate program for a few credits in physical education which will help lead to a lifetime of physical fitness.

The modern American university is well equipped to accomplish such goals as suggested above. There is no single way to accomplish these goals; flexibility and reasonableness should mark our curriculum and our implementation of it.

The Academic Major

The university provides students with an academic major by which the students associate themelves with an amorphous and complex university ("I'm a chem major.") It is also with the particular discipline that faculty usually identify themselves as professionals. The status of the academic major is enhanced by the departmental and professional school structures of the university; this structure has attempted to provide the right combination of breadth and depth within a particular field, and professional groups, including learned societies and accrediting organizations, have tended to encourage curricular modifications necessary to keep pace with changing conditions.

Quality academic majors are often the decisive factor which attract students to a particular institution. Career-conscious students, especially, can often determine which colleges and universities offer programs of merit; these play an important role in the process of student recruitment. Although no state university should offer programs of inferior quality, these institutions must identify certain programs to receive special levels of support. Such regional or national "Centers of Excellence" create important public images of a university. They also have the effect of bolstering related programs.

The phenomenal growth in size and prestige of professional schools has been one of the impressive achievements of higher education in the twentieth century. Few respected universities are lacking accredited major programs in engineering, education, and business administration. Land-grant institutions offer strong major programs in their colleges of agriculture and home economics. Additional professional programs include forestry, mines, pharmacy, journalism, nursing, and architecture.

Such programs hold the key to admission to the professions for millions of college students. The tremendous success of these programs has been one of the signal achievements of American higher education in the twentieth century. Through their accreditating associations, they have not only continually raised professional standards, but also have insisted upon the incorporation of the important leavening effect of liberal education within their curricula. One of the tests of higher education's responsiveness to societal needs in the 1980s will be the identification of additional professional programs to be incorporated into the curriculum for the benefit of students and the society which they will serve.

In addition to traditional academic disciplines, the many new "interdisciplinary" majors which have emerged during the past decade need careful examination. In response to new societal needs, programs which do not fit into traditional academic structures have begun to appear in increasing numbers. Programs in criminal justice, mass communications, gerontology, and environmental studies, for example, have been established to provide new career opportunities for students in high-demand areas. Such innovations are to be lauded, but at the same time carefully monitored because they are being developed outside of the domain of traditional academic disciplines, which have standards well-established by both tradition and recognized academic and professional associations. Conflict can readily erupt over what constitutes acceptable academic standards. A new department of individuals from diverse backgrounds who teach courses within an interdisciplinary context can not only generate internal departmental friction, but also spark conflict with established departments and colleges. Frequently such issues are set off by differences of judgment about what standards are to be established for faculty performance evaluations. Should faculty in an environmental studies or criminal justice department meet traditional standards of professionalism (i.e., research and publication), or should new ones be created (e.g., public service projects, curriculum design, etc.)? There are no ready solutions to problems such as these, but we must deal realistically and imaginatively with them. Given the nature of the rapidly-changing job market, such interdisciplinary programs will continue to increase in numbers in the years to come.

Whereas the academic major is most often designed to prepare the student for a particular career or for advanced study, the minor has been effectively used by advisors to supplement and enhance the major by providing students with related skills and analytical tools. Sociology students open new doors for themselves with a minor in psychology, and vice-versa. Journalism students benefit greatly from minors in political science, history, or literature. The selection of an appropriate academic minor can, and should, add luster to the undergraduate's total education. Some students select a minor to satisfy an intellectual curiosity or interest; others do so to assist them in their job quest. Therefore, minors in accounting, computer programming, and statistics have been very much in vogue during the past career-conscious decade, and the likelihood of such trends continuing is very strong.

Liberal Undergraduate Education

While the academic major and minor are alive and well, the condition of the liberal education component of the university curriculum has justifiably come under severe criticism. Liberal education is in trouble for many reasons, not the least of which being that it is impossible to develop a university-wide liberal education program which is acceptable to all important elements — the faculty, the administration, and the students. To put it bluntly, liberal education has not received the support merited. Consequently, such programs have languished. The recent Carnegie Commission Report cogently summarizes the state of liberal education throughout the nation: "General education is now a disaster area. It has been on the defensive and losing ground more than 100 years."[3]

One of the major difficulties in mounting effective liberal education programs are the roadblocks created by the manner in which universities are organized. If a program does not have an identifiable "home," with an approved budget, then it usually lacks the ability to generate strong support across departmental and college lines. The natural gravitation of power on campuses is to departments or colleges, not to university-wide academic programs. Most faculty members are trained in highly specialized areas and within a particular discipline, and sub-specialties abound. Historians, for example, usually identify themselves not generically, but as "a Civil War and Reconstruction," or "foreign policy," or "twentieth century French" historian. The reason for this phenomenon is quite simple: the body of knowledge within each discipline is so great that specialization is necessary.

Faculty eagerly teach graduate seminars or advanced courses in their particular specialty, but most instinctively resist suggestions that they develop a new interdisciplinary course for non-majors. Typically, the faculty's training does not readily lend itself to such an endeavor, and the professional recognition to be received will probably be nil. Publication possibilities do not normally flow from such teaching, and tenure and promotions committees are seldom impressed with the offering of a well-taught interdisciplinary course. It usually comes down to a point of conflict between a desired breadth of subject matter to be taught for a liberal education course, and the traditional depth expected in a discipline-oriented course. As one perceptive observer of the history of higher education, Frederick Rudolph, observes,

> Concentration was the bread and butter of the vast majority of the professors, the style they knew and approved, the measure of departmental strength and popularity. Breadth, distribution and general education were the hobby horses of new presidents, ambitious deans, and well-meaning humanists of the sort who were elected to curriculum committees by colleagues as a gesture of token support for the idea of liberal learning. When that gesture collided with the interests of department and the major field, only occasionally did the general prevail over the special.[4]

Liberal education throughout the United States can readily be summarized as being one of three basic varieties, all of which have some apparent strengths and obvious weaknesses. The most popular of the three is the "group distribution system," whereby the student selects courses from a fairly large list usually divided into the sciences, the social sciences, and the humanities. A variation of this is the requirement of a certain number of "core" courses required of all students. The second is simply a free elective system which results in the student and his advisor determining the courses to be taken. Such a system is popular with students because they can avoid areas in which they lack interest or background. The free elective system gives the student a sense of freedom in determining his program of study, but few students will develop for themselves a sufficiently integrated program of study. The third major concept is a series of required courses specifically designed for the liberal education component; these are usually designed to develop breadth, and frequently emphasize integration of knowledge from several disciplines within a particular course. Although this approach is specifically designed to meet the accepted concept of liberal education, it often results in serious problems. Most faculty lack the training and motivation to teach such interdisciplinary courses, and have little, if any, incentive to develop such expertise. The result can be superficial courses which lack either intellectual rigor or substance.

Few responsible academicians have reached the point where, even in the face of ever-increasing specialization in higher education, they will advocate abandonment of liberal education requirements totally. The future seems to lie with a few core requirements, such as freshman composition, with a larger number of courses to be elected from within a distributive system. The advantages of such a system are obvious: students enjoy the freedom to choose from among many courses (as often contrasted with the rigid requirements of their major); faculty can participate in the general education program by offering their own specialties; and departments can gain the important student enrollments which help support their major programs.

What, then, should a state university seek to accomplish in its liberal education curriculum? What goals and objectives should it realistically set for itself? How should these be implemented at a time when society is increasing its demands for additional technical preparation while backing away from heavy financial commitments to higher education? It would be good to be able to recommend that departments and their specialized faculty contribute to a truly integrative, innovative, cross-disciplinary, liberal education program. In theory, perhaps, such a proposition makes good educational sense. However, such an effort would most likely be another quixotic exercise in academic futility. Reality forces us to work within the system that is in place; that would entail a program such as the following:

1. A carefully selected set of core requirements, including English composition and a course in statistics or college algebra.
2. A set of courses selected by a university-wide committee which will enable students to acquire a working knowledge of the major areas of social science, the sciences, and the humanities and to achieve the various goals discussed earlier in this essay. These courses should be selected for their appropriateness in meeting the spirit of a liberal education. (Consumer Problems, for example, probably should not have the same legitimacy as Principles of Economics).
3. The opportunity for students to enroll in at least one or two truly integrative seminars at the junior or senior level which will enable them to relate their particular major with related concepts within a multi-disciplinary context. For example, students from such areas as engineering, political science, economics, journalism, and biology, could all benefit from interactions with each other in a seminar on "Man and the Environment." Senior faculty should be encouraged to offer such courses, and they and their departments be appropriately recognized for doing so.

The Role and Responsibilities of the Faculty

No matter what precise form the curriculum takes, however, the essential ingredient in the educational process is an energetic, quality faculty. If the professor in the classroom is not adequately prepared and properly motivated, no curriculum or course, no matter how well conceived, can provide a sound learning experience. In a time of tremendous change occurring in all academic areas, leaders in higher education must find ways to assist the faculty in maintaining their professional competencies and growing professionally.

An aggressive program of faculty development is essential for the 1980s. If a faculty is allowed to stagnate, no amount of curriculum revision will help. Support is necessary for faculty travel. Regional and national professional meetings provide not only formal sessions where new concepts and theories are explored, but equally important, opportunities for informal discussions with scholars in the same field. This form of periodic sharing of knowledge and intellectual stimulation is vital for the maintenance of a quality faculty. An aggressive and responsible sabbatical program is also important. Semester or year-long leaves afford many diverse possibilities for faculty to retool, to gain new expertise, to complete a major research project, and to rekindle their enthusiasm for their discipline. Teaching loads assigned by deans and department chairpersons need to be carefully considered relative to the trade-offs between the learning experiences of students and class size. A well-designed release time program is essential for faculty to continue to learn. Heavy teaching loads over extended periods of time, without adequate time for renewal and growth, will leave an institution with a dull and incompetent faculty.

University administrators must work hard to foster a climate on campus where faculty creativity and productivity are encouraged. It is not easy, of course, to convince budget-conscious governors, legislators, or regents that increased travel budgets or sabbatical leaves are absolutely necessary in a time of a rising national taxpayers' rebellion. However, it must be emphasized that the faculty is the real capital investment of a university or college. Just as intelligent and forward-looking businessmen must reinvest some of their annual profits into capital improvements and in the training and upgrading of their employees, so too must an institution of higher learning invest in its most important capital asset — the faculty. Such investments for faculty development are not only essential, but they also make good business sense.

In return, however, administrators and those who pay the bills have every right to expect a high level of productivity from the faculty. It is crucial that each faculty member be professionally active. Just as with private businessmen, we cannot invest hard-to-get resources and receive little in return. Unfortunately, it is not as easy to evaluate and judge productivity in higher education as it is in a private enterprise. There is no profit and loss ledger in higher education; many different views are in circulation as to what constitutes an acceptable level of faculty performance. It is my strong conviction, however, that such evaluative tools can be established and administered fairly. Accountability is necessary in public higher education, and those faculties and administrators who ignore this reality do so at their own peril.

University faculty members must be effective teachers. Our resources are not so large as to enable us to "hide" ineffectual classroom teachers in non-teaching responsibilities. Not only should each professor be capable of presenting appropriate material in a clear and reasonably interesting fashion, but must also be capable of stimulating intellectual curiosity among at least some of his or her students. In addition to a thorough knowledge of the subject matter being taught, one of the key ingredients to successful teaching is the enthusiasm displayed by the instructor for the subject matter. Debates have long raged as to what constitutes good teaching, and no evaluative instrument yet designed to measure teaching effectiveness will escape the wrath of at least a significant number of faculty. However, it is possible to develop reasonable procedures to assist professors in identifying teaching deficiencies and to assist them in finding appropriate solutions.

The university must also expect that each faculty member be active professionally. Within the faculties of the arts and sciences and the professional colleges, this normally is translated into research and publication, or similar activities. Public service activities can be an acceptable alternative avenue for faculty members in some disciplines. Faculties in some of the new and emerging fields, such as allied health sciences, have fewer opportunities for conducting basic research, but they have unlimited opportunities for doing useful applied research or meaningful public service projects.

It is my considered view that each faculty member must be actively engaged in a significant research or related project on a more-or-less sustained basis. This professional responsibility is inherent in one's appointment to a university faculty. When an individual is a member of a community of scholars, he or she should therefore be engaged in doing scholarship. Such activity is not only vitally important for the faculty member's own sense of personal esteem and professionalism, but it also provides administrators with at least one, albeit imprecise, measure of a faculty member's competencies. Once an individual has passed the final dissertation defense, unless that person presents papers at professional meetings and submits manuscripts to refereed journals and scholarly presses, he or she is essentially immune from professional criticism. Thus such activity provides a reasonable assurance to tenure and promotion committees that an individual is keeping up-to-date in the field. It also is a reasonable indicator that intellectual atrophy has not set in. Naturally, judgment and discrimination are necessary in evaluating the scholarship of any individual; it is possible, of course, to distinguish between the quality of journals in which articles appear, and one can usually identify quality university presses from subsidized "vanity" publishing houses.

This is not to advocate a simplistic and silly "publish or perish" policy. It is to suggest, however, that a humane and reasonable "publish and prosper" system is needed. It is to suggest that university faculty members must be engaged in a meaningful fashion in some significant professional activity in addition to performing in a creditable fashion in the classroom. There cannot be, in today's dynamic academic world, an acceptable dichotomy established between *teaching* and *research*. Research is an important way for a faculty member to stay abreast of his or her discipline. It has been my experience, as a student, professor, and administrator, that the best teachers quite often were those who were actively engaged in research. We must, as a corollary to this high level of expectation, provide reward systems for those who are successful as academic professionals. Incentives in terms of merit pay increases, institutional grants and public recognition are merely some of the obvious devices which can be employed.

There is an old saying, "You get what you pay for." If university faculty members are adequately compensated for their efforts, and if they are provided with sufficient levels of support, then a high dividend will be paid back to the institution and the state of Nevada. The quality of the educational programs will be increased, which will provide our students with better learning opportunities. The resulting excellence of the programs will attract increased numbers of out-of-state and foreign students. Not only will these students pay higher out-of-state tuitions, but also contribute significantly to the local economies of Las Vegas and Reno.

The dividends from such an investment in quality programming will also return real dollars to the state, because both private and governmental agencies will seek out faculty expertise to perform research and related projects. A land-grant state university must be actively engaged in obtaining grants because they not only provide vital external support for research and supplement state appropriations, but also provide much-needed support for undergraduate and graduate students as research assistants. The potential for major increases in such funding is plainly present in our universities, and it should be assiduously cultivated in the 1980s.

Concluding Comment

A dynamic, quality university is an exciting place. Enthusiastic students and stimulating professors make for a magical context from which greatness springs. The challenges of the 1980s for higher education are monumental, but they can be met. We must find ways to provide the resources necessary to enable the faculty to do its job. The faculty must then respond by creating an intellectual environment in which our students will be adequately prepared for the exciting years of changes that lie ahead. This effort will entail ongoing imaginative reviews of not only the total curriculum, but also of each course that is taught. It will require students who will want to work hard at their learning, and it will require faculty members who want to maximize their professional potentials as teachers, scholars, and public servants. If this can be achieved, then the ultimate beneficiaries will be the people of the state of Nevada.

Footnotes

[1] Frederick Rudolph, "Dirty Words: Leadership and Liberal Education," *Change*, April, 1980, pp. 18-19.

[2] *Strength Through Wisdom: A Report to the President from the Presidential Commission on Languages and International Studies*, Washington, D.C.: Department of Health, Education, and Welfare, November, 1979.

[3] The Carnegie Commission, *Missions of the College Curriculum*, San Francisco: Jossey Bass, 1977, p. 11.

[4] Frederick Rudolph, *Curriculum: The American Undergraduate Course of Study Since 1633*, San Francisco: Jossey Bass, 1977, p. 253.

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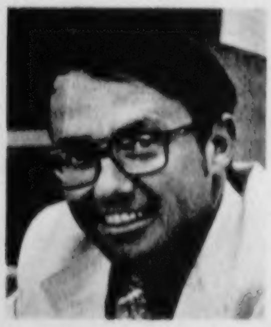

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Graduate Education in Nevada

by R.D. Burkhart

Introduction

Among the thirteen states involved in the Western Interstate Commission for Higher Education, ten states have universities offering the doctoral degree in mathematics, nine offer the doctoral degree in English, and all thirteen offer the doctoral degree in Physics.[1] Similar statistics could be cited for the other standard academic disciplines; it adds up to a sizable commitment to graduate education in the Western United States. Evidently Westerners think the benefits of graduate education are well worth the effort and expense because they are supporting such programs on a broad front of academic disciplines. This is not, of course, a phenomenon peculiar to the western U.S.A. Graduate study and research are a traditional and integral part of higher educational institutions in most parts of the world, with the notable exception of the "Third World" or "have-not" countries.

The point of this article is to outline a panoramic view of the current state of graduate programs in Nevada, to indicate some of the important historical aspects of graduate education here, and to attempt some predictions of short-term future trends. At the same time, we will investigate the validity of some commonly held misconceptions concerning the nature of graduate programs, graduate faculty, and graduate students.

Historical Perspective

Many people are surprised to learn that graduate education at UNR spans a time period in excess of seventy-five years. In his book, *The University of Nevada, A Centennial History*, Dr. James Hulse points out that one student in English and two in Mining Engineering received master degrees in 1903.[2] These were the first graduate degrees ever awarded by the university and represent, therefore, the beginnings of graduate education in Nevada. Even more surprising is the rapidity with which advanced degree programs were added. By 1928, masters degrees had been awarded in twenty-five different disciplines and, at the present time, there are fifty-five masters programs at UNR. The Graduate College at UNLV was established in 1972; there are currently advanced degree programs sponsored by twenty-three departments or equivalent units.

The entry into doctoral level education is a much more recent phenomenon. In fact, the first Ph.D. degree at UNR was awarded in Geology in 1964. In addition, doctorate degrees in sixteen additional areas are now offered by UNR, including the Ed.D., or doctorate in education, as well as the Ph.D.; the Doctor of Medicine degree was awarded for the first time in 1980. At the present time, the Ed.D. is the only doctorate awarded by UNLV; a total of seventeen Ed.D.'s have come out of this program to date.

It is one thing to have programs, but it is also fair to ask if students are taking advantage of these programs. One way to answer this question is to look at the bulletin printed for the UNR Commencement exercises of May 1980. The advanced degree students included two hundred and twenty-seven masters degrees and sixty-one doctorates for a total of nearly three hundred degrees. Another indication of student interest can be obtained by examining enrollment figures for Fall 1979. These show a total graduate headcount enrollment of 1,711 of which 792 were on graduate standing, the remainder being part-time students.[3]

Although graduate degrees had been regularly awarded by UNR for many years, it was not until 1955 that a separate School of Graduate Study was created and a permanent Dean appointed to oversee the school's operation. This was followed, about ten years later, with the creation of a Graduate Faculty and a Graduate Council. The Graduate Faculty members both at UNR and UNLV are those regular faculty members who possess the qualifications needed to supervise study programs for students seeking advanced degrees. The Graduate Council passes upon applications to the Graduate Faculty and is responsible for approval of courses and curricula as well as graduation requirements and other matters relating to the maintenance of academic standards at the graduate level. Similar types of administrative structures are in existence both at UNR and UNLV.

Graduate Education and Graduate Research

The major distinction between graduate and undergraduate education is the strong research orientation associated with advanced degrees. About half of the masters degrees awarded athe 1980 commencement were research-based degrees and, of course, all of the Ph.D.'s and Ed.D's require research. Thus, a key element in training at the graduate level is problem-solving. As we shall see, there are many benefits to be gained by this particular approach. A good research project definitely requires a joint student-faculty effort. The faculty advisor aids in the selection and approval of an important problem for the student — one which has a reasonable chance of being solved. The student learns the techniques of investigation suitable to the discipline and the methods of data analysis that are required. The entire project, including conclusions, must be tied together in a written document that becomes a permanent contribution placed in the library and published in the literature of the discipline.

If the educational process has worked properly, the state and society in general stand to gain in many different ways. Some of the obvious benefits are as follows:

1. A professionally trained individual is prepared to assume an immediately active role in society.

2. The thesis or dissertation will stand as a positive contribution to the knowledge of the discipline.

3. The professional competence of the faculty member directing the study is enhanced, thus sharpening his teaching skills and increasing his value to the university and the state.

4. The existence of graduate study and research activities mixed with undergraduate training radiates a sense of commitment to scholarship which enhances undergraduate education. Research directly benefits undergraduate education since the results are integrated into class material.

5. The presence of graduate programs of quality offers the state's citizens a chance to obtain advanced training within Nevada. If such programs were not available, citizens desiring advanced work would have to leave the state, often causing serious disruption to their lives, to say nothing of the additional expense.

A further benefit of a graduate program, and one not often appreciated, is that some of the more capable graduate students may receive appointments as teaching assistants which helps pay the expense of their graduate study. In this way, very highly qualified students can take over some of the more routine aspects of undergraduate instruction, thus giving the faculty more time for activities such as course development, lecture and examination preparations, as well as thesis and dissertation direction. Also, the student can gain valuable educational and professional experience as an assistant.

This brings up a commonly held misconception that graduate programs occupy an inordinate amount of faculty time. Actually, the presence of graduate teaching assistants often improves efficient use of faculty time. Instead of grading a stack of homework papers, the professor can be working on the next day's lectures or solving problems for the next homework set. Instead of spending an entire afternoon watching over a section of students in an undergraduate laboratory, the professor can design new experiments or work out bugs in old ones. The incorporation of a graduate component in university instruction represents a positive approach to the efficient use of faculty time.

What is the Character of Today's Graduate Students?

The total headcount of graduate students following the registration period of Fall 1979 was 1711. Many Nevadans will recall that in the late 1940s the entire university enrollment stood at about this figure. It is important to remember, however, that not only has total university enrollment climbed but the proportion of graduate students has also increased. In the late 1940s graduate students accounted for only about 3 percent of the total student body. Today one student in five is a graduate student. In fact, the entire orientation of UNR's student body is tending toward upper division and graduate students while the percentage of freshmen and sophomores is declining. For example, in 1971 lower division students (i.e. freshmen and sophomores) accounted for 52 percent of the head count enrollment. In 1979 that figure had dropped to about 45 percent. During the same time period, upper division course enrollment increased from 32 percent to 34 percent and graduate students recorded the largest percentage gain, increasing from 16 percent to 21 percent. Thus, significantly more than half of the student body at UNR now consists of juniors, seniors, and graduate students.

There are other ways of characterizing graduate students than just quoting numbers. For instance, it turns out that about three-fourths of the UNR graduate students are residents of the state, a little over fifty percent are males, and about four percent are of minority status. The number of part-time students is made artificially large by the fact that nonresidents are charged nonresident tuition if they take more than seven credits but not if they take six or less. Furthermore, a six credit load is considered a full load for students who have assistantships. In spite of these facts, "eight credits or less" rather than "six credits or more" has been established as the definition of a part-time student. Under this definition a little over 60 percent of the registered graduate students are part-time.

It is reasonable to ask what has caused this increase in graduate enrollment. Why are there so many people interested in advanced university work? There is probably no single explanation for this occurrence, however, a number of contributing factors may be cited. One of these is the increased pay scale which certain organizations provide to employees with advanced degrees. Public school teachers, for example, automatically move to a higher pay scale upon completion of a masters degree. In some cases, possession of an advanced degree makes a person eligible for certain types of jobs which require specialized training. Examples include research and development positions in electronics, aerospace, petrochemicals, and food processing. People with advanced training in foreign languages are increasingly in demand by multi-national corporations and government agencies, while graduate level expertise in history and political science has been found to be a valuable asset for those involved in regulatory work and legal consultation.

Another point to remember is the changing nature of the technological level of society. The development of solid state electronics, for example, has both created jobs and destroyed them. Computerized bookkeeping, for instance, is much more affordable now that low cost minicomputers are available. Employees need to keep themselves up-to-date concerning new developments or risk losing their positions to those who do. The university can help not only in providing the advanced training which is needed but also in making courses available which deal with psychological and emotional stresses associated with our rapidly changing world.

Critics of graduate education sometimes make the claim that graduate education helps only a privileged few students. When it is realized that the graduate student population at UNR is approaching 2000, and as we recognize how many ambitious and industrious people there are who hold eight-hour-a-day jobs and do graduate study in addition, then claims of elitism cannot be taken very seriously. It is certainly true that one cannot be a graduate student without obtaining an undergraduate degree, but the undergraduate degree is the only absolute requirement. It is not always possible for students with low grade point averages to achieve immediate graduate standing, but this can be achieved after demonstrating one's ability to handle graduate level work on a trial basis. Many people attend a graduate school as part-time students while holding full-time jobs, and hundreds of students have completed advanced degrees in this way. The main prerequisites for success, assuming desired programs are available, are a willingness to work and self-motivation, plus basic abilities.

Costs and Benefits of Graduate Research

Because research occupies a focal position in graduate education, it is well to conclude this article by considering the impact of this research establishment on the state in terms of benefits and costs. It is not really possible in a single article to give a detailed accounting of the many ways that university research expertise helps the people of the state, but one obvious way is in the support it gives to the major economic sectors: tourism and gaming, mining, and agriculture.

In the area of gaming, for example, faculty in the Business College have produced economic forecasts for the industry, studies on the psychological factors associated with risk-taking are being investigated in the Psychology Department, and engineering faculty have provided expertise in the problems of electronic gaming. From remote sensing for the survey of rangelands to photochemical storage of solar energy, the university provides a singular resource to the people through the existence of this research establishment, an establishment founded in response to the needs of graduate education.[4]

To carry out this research function many different types of resources are needed and they vary quite a lot from one department to the next, even within the same school or college. In some areas, for example, anthropology, history, or sociology, faculty travel is very important for the purpose of on-site investigation. In other areas, such as the physical sciences, expensive instrumentation must be purchased and maintained. All graduate academic areas need a good library, and, although the computer has not quite reached the status which one accords to the library, access to a good computer has become indispensible in many research areas. Of course, both computer and library facilities would be needed for the undergraduates even if there were no graduate programs. However, both are used extensively by graduate students and faculty.

Financial support for the library and the computer come from state revenue but the level of support is far below accepted norms. For the library, for example, there are standard formulas which exist indicating the proper level of support considering student population, types of programs, etc. According to the Clapp-Jordan formula, UNR libraries should have a current budget of $3,210,000 whereas the present budget is $2,343,533. This is only 73 percent of the appropriate minimum level for adequacy.[5] Support for computing is also at minimal levels.

The taxpayers also support stipends of graduate teaching assistants which represent indirect support to the graduate program and direct support to citizens enrolled in graduate programs. State-supported research assistants are not provided, however, and very little money for research equipment is allowed. The allocation for faculty travel adds up to about $35 per year and has never been any higher than this in the sixteen years that this writer has been at UNR. This miniscule state support for travel to professional conferences and for research purposes is made even more problematic by the relative geographic isolation of Nevada.

It is indeed a remarkable fact that research activities exist at all when so little support is provided from state funds. The answer is in the existence of an active and aggressive faculty who realize the critical role of graduate education in providing satisfactory training at the university level for all students. Ten years ago UNR actually had a larger FTE (full-time equivalent) faculty than it has today (341 in 1969 and 334 in 1979). Of course, the student population has increased during that time so that the student-faculty ratio has gone up (17.99 in 1969 and 20.83 in 1979). Although this represents a definite increase in faculty workload, these figures do not tell the whole story. First of all, as indicated, the character of the student body has shifted from being primarily lower division to upper division and graduate students.[6] This means that the demand on specialized faculty expertise has increased because of the more sophisticated nature of the students being taught. Also, such students require smaller classes and more individualized instruction and this, in turn, means the expected workload for faculty has increased significantly.

In spite of these increases in the workloads of faculty, this same faculty is actively and successfully seeking increasing amounts of non-state support for research, course improvements and development and equipment. Five years ago university grants (UNR) from non-state sources amounted to $1.1 million. Last year this figure had climbed to $2.3 million, and these figures do not include Hatch Funds or McIntyre-Stennis Funds awarded to the College of Agriculture.[7] In addition, a recent survey of the academic departments at UNR showed that during 1979 the faculty had published twenty-one books and four hundred thirty-seven articles in refereed journals.[8] Thus, the faculty is working very hard to offset costs of graduate education by bringing outside money into the university. In terms of direct benefits to the students and to the citizens of the state, probably no educational activity at any level pays its own way as effectively and obviously as graduate education.

An excerpt from the report of a recent accreditation team provides an objective view of the present situation:

> One of the prime functions of a quality graduate school is the training of students in the processes involved in the discovery of new knowledge. In order to carry out this aim it is necessary to have a staff that is also engaged in scholarly production that advances the frontier of knowledge. This is one of the most costly phases of higher education; but if a University is to commit itself to a quality research program for both staff and graduate students, it must be able and willing adequately to finance and otherwise support such a program.

> At the present time, the University of Nevada is not doing this. While the faculty as a whole is well qualified and anxious to carry on research they are hampered and frustrated by lack of funds . . .[9]

Thus, graduate programs in Nevada are beginning to work because of faculty commitment and energy. The program is presently at the threshold of maturity and even modest amounts of state support could push the balance in favor of a high quality graduate education in many areas.

Footnotes

[1] "Inventory of Doctoral Programs in the Western United States," Western Interstate Commission for Higher Education (1979).

[2] James W. Hulse, *The University of Nevada, A Centennial History*, Reno: University of Nevada Press, 1974, p. 175.

[3] The enrollment figures given in this report are from the UNR Office of Institutional Planning and Budgeting.

[4] The results of a recent survey of UNR academic departments by the Graduate School has yielded scores of examples of graduate research and faculty expertise applicable to economic concerns of the state. These have recently been gathered together and reported in the document referred to as reference 6 of this report.

[5] Verner W. Clapp and Robert T. Jordan, "Quantitative Criteria for Adequacy of Academic Library Collections," *College and Research Libraries*, Sept. 1965, pp. 371-380.

[6] James T. Richardson, "Changing Patterns of Enrollment at UNR, with a Discussion of Budgetary Implications," *Nevada Public Affairs Review*, No. 2, 1979, pp. 28-29. Bureau of Governmental Research, UNR, Reno.

[7] Information obtained from the Office of Grants and Contracts, Controller's Office UNR.

[8] Report to the Board of Regents of a Task Force on Graduate Education at UNR, March 1979.

[9] "Report of an Evaluation Visit to: The University of Nevada-Reno, Reno, Nevada, March 5-8, 1978." Northwest Association of Schools and Colleges: Commission on Colleges, p. 68.

Dr. Burkhart received an A.B. degree from Dartmouth College in 1956 with a major in Chemistry. His Ph.D. degree, awarded in 1960, is from the University of Colorado in physical chemistry. Dr. Burkhart came to the University of Nevada, Reno as an Assistant Professor in 1965 and has remained at this institution since that time with the exception of the 1974-75 academic year which he spent in Manchester, England as a visiting scientist in Molecular Physics at the University of Manchester.

The Crisis in Values: Report of a UNR Conference

by James W. Hulse

Responding to a widespread feeling that educational institutions are neglecting the problems of social responsibility and human values, several organizations sponsored a conference in April, 1980, on the "Crisis in Values: Its Meaning for Higher Education in the 1980s."[1] The conference was held on April 9-11 and April 16-18, 1980 at the University of Nevada, Reno, and featured four major addresses by visiting scholars and administrators. There were opportunities for discussion following the addresses, with panels of respondents being organized with participants from the Nevada professional communities, faculty members from neighboring universities, and local faculty and students.

The major participants were Dr. Jerold Roschwalb, Director of Governmental Relations for the National Association of State Universities and Land Grant colleges; Dr. Robert Marshak, former President of City College of New York and presently Distinguished Professor of Physics at the Virginia Polytechnic Institute and State University; Dr. Harold Taylor, former President of Sarah Lawrence College and presently Director of the Center for International Service at the College of Staten Island; and Dr. Arthur Bestor, Professor Emeritus of History at the University of Washington. In what follows, highlights from the talks will be presented along with some assessment of the responses from panel members and audience.

The Roschwalb Dialogue

Dr. Jerold Roschwalb, the first speaker, raised the question of whether a crisis in values exists. Although he agreed that there was a neglect of concern for the humanities and specifically for study and training in foreign languages, he said: "I am not sure at all that there is any kind of crisis in values. I am sure that there are a lot of people worried about there being a crisis in values and there may be a crisis in that." Dr. Roschwalb acknowledged that there is a "mishmash" of values in Washington, D.C., and his advice to the Nevada audience was partly to avoid entanglement in the "plethora" of national government activities and partly to rely on knowledgeable individuals when dealing with the federal bureaucracy. "Washington is a very pragmatic town," he said, noting, "The federal government has never given anybody or any organization a dollar without exacting a price, and that is all right, because that dollar belongs to you and me."

Dr. Roschwalb's remarks addressed only incidentally the question of how universities could serve society and enrich the understanding of the humanities and the sciences. However, his talk was an informative summary of how results are achieved, or why administrations fail, in Washington:

> We have an administration for the first time . . . in the history of the country, that is not really in charge of the town where the insider determines what is going to happen. . . . Having a phone number in Washington is what is important. I swing in Washington, to use the colloquial phrase, not because I know so much, but I know the people who know, and there isn't a question . . . involving the federal government today that a phone call to my office at nine o'clock cannot get you an answer by ten.

It had taken ten years, Dr. Roschwalb said, to get the phone numbers, and the fact that the Carter Administration does not have the phone numbers — and "does not know that it does not know" — makes it "ineducable. . . . If you want to speak about a morality in Washington, D.C. — and there is a morality — it is getting things done. The highest moral value is getting things done." Although some of these remarks brought firm counterstatements from some listeners, Dr. Roschwalb's assertion that the most pragmatic of academic studies are the humanities, "because it enables you to be a human being," received strong support. The learning of a trade he considered of secondary importance to an education based in the humanities.

Dr. Roschwalb's remarks provoked a few sharp responses from the members of the panel who commented on his approach. University Regent Jack McBride acknowledged that the bureaucracy of Washington, D.C. had become a "wiggling mass," assuming increasing responsibility and authority from state and local governments and the universities, and he expressed a wish for the universities and other institutions to develop the technique and the will to break the heavy dependence on national budgets.

Dr. Judith Eaton, President of the Clark County Community College, while taking note of some of the "negativism" in Dr. Roschwalb's analysis of Washington, warmly underscored his reference to the humanities as a pragmatic study. She said, "I believe that effective career education is impossible without being able to describe that education as humanities education. . . . (H)umanities education *is* vocational education." In this context, Dr. Eaton suggested that Roschwalb's remarks could help with a "refocusing or reforging of values within the society."

Dr. Elizabeth Frances, Director of Freshman English at UNR, argued that there is indeed a crisis in values, and that in part it is reflected in the fact that ". . . we can no longer depend on a core of skills in reading and writing which we use to form the basis for further education, and that we can therefore no longer depend fully upon a core of knowledge, of ideas, of humanistic principles on which to build the more advanced sequences in our educational process." Dr. Frances urged that the university do more to build firm relationships with other levels of the educational system in an effort to remedy the situation.

Former Governor Grant Sawyer made the most direct challenge to Dr. Roschwalb's ideas, summarizing them as a treatise on "who has the power" and "how to get things done." Governor Sawyer rebelled at the idea that the "third or second level" bureaucrats run the government on the basis of having the correct telephone numbers. Dr. Roschwalb's analysis might be correct, the governor said, and if so, those bureaucrats might be partly responsible for the deterioration of values and education. He concluded his remarks with an implied challenge: "I hope that you're not right when you say that the second and third level bureaucrats are brighter, better educated and are making the decisions in Washington, D.C., because they do not answer to anybody. They are not elected by anybody, and if they are making the decisions, maybe we should start doing something about that."

The Marshak Dialogue

A substantial number of those who heard Dr. Roschwalb's speech and the following discussion also attended the events in which Dr. Robert Marshak was the central figure. The distinguished physicist himself reacted to Roschwalb's thesis about Washington and its role in influencing values and education, dissenting from some of Roschwalb's positions and suggesting a different kind of relationship for the universities in their dealings with Washington.

In Dr. Marshak's view, the federal government's policy-makers ought to be much more dependent on the universities for the talents and skills they can offer in facing the global problems now confronting the nation and mankind. Dr. Marshak's address was essentially a challenge to this university and others to form alliances, consortia, and other cooperative efforts to bring the best scientific and intellectual resources available to meet the needs of society and the world. A few representative excerpts from his prepared text summarize the message:

> I have become convinced that the impact of science and technology on our post-industrial society is so great that unless our universities are willing to accept much greater responsibility for applied multi-disciplinary research on the larger societal problems, more and more of our social decision-making will be based on the self-serving needs of government or industry, the blandishments of well-intentioned but uninformed citizens' groups, and the pervasive emotionalism of the mass media. I believe that the present-day American university can be the most effective instrument of social decision-making because it is the prime institution where intellectual discourse is relatively free of political pressures and ideological expediency and where research and scholarship can be pursued without being subjected to the changing moods of external publics.
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> The strong tradition of intellectual freedom in American universities is rightly regarded as the factor chiefly responsible for the flourishing state of basic science in academe. To a remarkable degree, the academic scientist has been permitted to follow the bent of his own curiosity and the creative impulses of his own mind. Another prerequisite for the prospering of basic research is openness of communication. The American scientist doing fundamental research has been free to publish all his results, to receive publications from colleagues and laboratories throughout the world and to enjoy personal contacts with many experts in his field. These conditions are part of the continuing process of learning, of intellectual challenge and of preparation of future research problems, and create a very favorable climate for the practice of pure science.

Later in his lecture, after reflecting on the humanistic and humanitarian concerns of the Russian scientist Andrei Sakharov about the future of world civilization and the relative insensitivity of official Washington's awareness of this problem in past years, he said:

> I am urging that during the decade of the 1980s, American universities should respond to the Sakharov's courageous manifesto of 1968 (and his even more exemplary behavior since that time) with a solemn commitment to come to grips with the global problems about which Sakharov spoke in 1968 and with the stark realities that must now be faced by every man, woman, and child on planet Earth . . .
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> Before I attempt to spell out my view of the ways in which the global mission of American higher education could be implemented, I must pause to deal forthrightly with some of the strong caveats expressed by some distinguished members of academe that the very concept of "mission" for an American university is a contradiction in terms. Thus, the late Professor Charles Frankel, the former Director of the National Humanities Center, wrote in the December 1977 issue of *Change* magazine that the humanities disciplines are "the most aristocratic in their pedigrees; in a world bound to the wheel of change, they stress the persistence of unchanging issues; they do not offer the prospect of progress in knowledge as the sciences do, nor do they even offer, as do the social sciences, the promise of such progress; they raise questions about meaning, purpose and values that a hurried world, enamored of technique, finds uncomfortable."
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> I do not wish to argue whether Einstein's theory of relativity is as "aristocratic in its pedigree" or "stresses the persistence of unchanging issues" as does Shakespeare's Hamlet. I do acknowledge without hesitation that philosophy, history, literature, religion, and the arts raise questions about the meaning and purpose of life and generate the values that inform the human condition. What I do find difficult to accept is the attitude of many members of the humanities community that they are the only true custodians of the past and of traditional learning and I deplore their reluctance to engage in intellectual dialog with social scientists in order to deal with the demands of our rapidly changing society. In my view, a truly humanistic approach to the exigencies of our modern dilemma will require a sharing of intellectual resources from all branches of learning.
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> Parenthetically, I should remark that I tried to persuade the Planning Committee for the National Humanities Center to locate this center in the metropolitan New York area. I advanced the argument that locating the National Humanities Center in the communications capital of the world and the home of the United Nations, would be highly consistent with one of its major purposes, namely to orient the disciplinary skills of the humanists to the present and future as well as towards the past, towards society as well as toward the discipline. Perhaps I was not unbiased (since I was President of City College at the time) when I pointed out that a metropolitan New York location would facilitate the basic interdisciplinary thrust proposed by the Planning Committee of the National Humanities Center, namely the extension of the humanist's concern beyond the traditional boundaries of disciplinary studies to the areas of public policy formulation, the development of new educational models, thematic studies, and even problem-solving activities. To my regret, the decision was finally taken by the Planning Committee to locate the National Humanities Center amidst the bucolic splendor of the Research Triangle of North Carolina, but the exercise was a measure of my strong desire to encourage intellectual dialog among faculty from the humanities, social sciences, science and the professional schools, in order to make a dent in the global challenges that confront all of us . . .
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> American universities can take a giant step forward in the furtherance of their global mission by working out a comprehensive plan to superimpose applied research and mis-

> sion-oriented studies onto the present structure of professional and discipline-oriented programs. The applied research and mission-oriented studies would deal with the global problems of staggering proportions that confront the U.S. and the rest of the world, and would have in common the attempt to firmly implant the usual professional and discipline-oriented career goals in a global, humanistic, multi-disciplinary context. The global research mission of American higher education could at least be partially implemented via a network of applied inter-disciplinary research centers situated on various campuses throughout the United States. Examples of what I have in mind are:
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> 1. A Center on "Peace and International Security" (including arms control, disarmament, limitations of national sovereignty, and so on).
> 2. A second example would a be a Center on "Problems of Developing Countries" (including technology transfer, urbanization and industrialization, agricultural and rural development, and so on.) There is room here for many sub-institutes on different campuses . . .
> 3. A third example would be a Center on "Urban Problems in Post Industrial Societies" (including transportation, housing, pollution, and so on) . . .
> 4. A fourth example is a Center on Administration, especially management (including public policy and administration, comparative administration and economic development, problems in international administration, management problems in community development, and so on) . . .
> 5. A final example is a Center on Energy, Ecology, and Environment . . .

In each case, Dr. Marshak offered examples or suggestions to supplement his basic idea and related his own successful experience at City College of New York. He went on to say,

> Academic programs could be created that would emphasize the commonality of the many global problems besetting all mankind — independent of national, racial, political, and social differences — and that would inculcate a perspective of tolerance and comprehension towards diverse cultures. The idea would be to superimpose a global outlook onto the present structure of discipline-oriented graduate programs. A "Global Educational Model" of sorts would be developed, whose objective would be to educate a graduate student — on either the master's or doctoral level — who would be motivated and committed to serve the world community.
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> In more concrete terms, the "Global Educational Model" could be implemented on the master's level in the discipline-oriented social sciences and natural sciences or in the professional schools. An additional year could be used to convert the present master's programs into "Master of Philosophy" programs in applied social science or applied natural science or applied engineering, or what-have-you. During this additional year, the student would be exposed not only to the global applications of his particular discipline but also to the question of values and the matter of social responsibility. Clearly, this will involve cooperative efforts from scholars representing disciplines in science, liberal arts, and professional studies. The American university, as President Hesburgh of Notre Dame University reminds us, has tended to abdicate concern for values: "We have become so obsessed with objectivity that we have neutralized standing for anything. The result is that we turn out highly competent, but morally neutral people . . ."
>
> I fully realize that many centers or institutes devoted to science, technology, and human affairs have sprung up at various universities throughout the country. However, I have the impression that most of these centers are underfunded, insufficiently focused, and unprepared to generate the innovative educational programs that will train our young people to relate to problems of global concern. I am certain that some of these centers will make valuable contributions to global research and advanced training. However, this will not suffice; I am calling for a crusade, a massive investment of human and physical resources to meet the global challenges facing our nation and the entire world.

Among the commentators on Marshak's remarks, Professor John Hallett of the Desert Research Institute raised one of the more stimulating issues when he suggested that the university should assume the obligation not only of raising the literacy of all its students but also of improving their basic scientific, mathematical, and technical understanding:

> We expect our graduates to be literate, in the sense that they not only can read and understand the written word, but also make their ideas effective through their own writing. In much the same way, I suggest that we should expect our graduates to have an appreciation of magnitudes and directions of forces which shape our society and our environment. Our graduates should be familiar with basic mathematical, statistical, and physical concepts, but they should have the capability of using these concepts in cogent arguments and in an effective manner. Lack of such capability, of appreciating the numerical arguments of, for example, mineral depletion, exponential population growth, and the choices of nuclear energy, places some current discourses on these topics in the realm of fantasy. An appreciation of the way our society works must be capable of assessing not only legislative and electoral time scales, but climatic and geological scales as well. My question is, how can we assess values without both a literate and a numerate constituency?

Dr. Marshak, in his response, endorsed this view, asserting that most scientists recognized the value of humanistic values, but that many humanists were proud of the fact that they had no scientific or numerical skills.

Dr. Hallett raised questions about whether the kind of university-initiated service programs that Dr. Marshak proposed could be more effective than such programs sponsored by the United Nations or by governments. In common with several participants in the conference, he urged a broadening of the education programs offered to the students. "A spirit of *wanting* to assess values and employing something more for decision making in our society than simple expediency should be behind our whole higher education system. If we do not generate in the upcoming generation a questioning of the small-view concept, a desire for a capability to view our state as a part of the nation and our nation as part of the world, we fail as teachers in a university, we fail in our role as a university. The idea of a post-doctoral setting for such ideas can only succeed providing that teachers along the way have smoothed the path for a few very dedicated individuals."

One of the speakers to whom Dr. Marshak responded most warmly was George Aker, president of the Nevada National Bank, who asserted that the banking industry is willing to support well-conceived programs that have a chance of providing stability and assistance in Third World countries. He seemed confident that significant support funding could be found in private financial institutions for the kind of international service programs proposed in Dr. Marshak's address.

The Taylor Dialogue

Dr. Harold Taylor reflected on the changing patterns of "American youth" as it has been perceived and as it has perceived itself during the past half century. Like Dr. Marshak, he advocated an activist role for the universities, but his remarks implied that they should assume more responsibility for arousing a sense of social conscience in the students of the 1980s.

The young people of the 1920s as celebrated in the novels of F. Scott Fitzgerald and Ernest Hemingway were characterized by Gertrude Stein as "the lost generation," Taylor reminded his audience at the outset. He said that society implicitly accepted such labels as this and the "jazz age" for its young people then. In the 1930s, typical young people of college age did not seek higher education, and the rise of Naziism and Fascism in Europe went largely unnoticed. There were some activisits, but they joined the parties of the older people in most cases. During the 1940s, the war brought the country together as one people; there was a national unity of purpose and little indication of tensions between young people and their elders. The next decade brought the "silent generation . . . which was silent because everytime anybody said anything that was at all interesting or radical, somebody jumped on them, and one would find onself unemployable as a young graduate from a college in the 1950s, if for example, he had done as innocent a thing as joining the Communist Party or making a speech against John Foster Dulles, who seems to me to have been invented to make speeches against . . ."

The generation was silent in public, but privately it read and endorsed the values of J.D. Salinger's Holden Caulfield and rejected the "flatulent optimism" of the older society of the Eisenhower era. By the 1960s, young people had accepted the Salinger-Caulfield thesis that the older generation was "phoney . . . and going on to the proposition that the young people should save the country by attacking its major institutions, by accommodating the society to the necessity of an equalitarian ideal, and by reforming the educational system from top to bottom. In 1963, with the free speech movement beginning at the University of California in Berkeley, a pattern of rebellion by the younger generation against the authority of the old was established; it became article of faith that any organized institution was rotten at the core and needed to be overthrown . . ."

There were three dominant assumptions of the generation, which were not merely American but international in scope. The three major propositions adopted by the "informal, invisible community of allies among the young" were:

> 1) Anybody who is young and is being put into a social and political system not of his own choosing has a right to rebel against it, and anyone for whom decisions are being made by an older generation and its institutions has a right to object . . .
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> 2) That the universities and colleges were not liberating instruments for the human intellect or for political freedom or for social reform, but were in fact parts of an established order which determined who should get the privileges of society, so that entrance to a university became an opportunity to move into an executive position . . . in the society itself . . . Universities were on the side of established order and economic progress for an elite and not on the side of the people as a whole.
>
> 3) That the content of the university curriculum was so inadequate, so flimsy, so irrelevant . . . so badly organized that the student must take the curriculum into their own hands and inject some intellectual, social and political content . . .

This, Taylor asserted, was a "spontaneous, uncontained, unplanned movement," within the universities of the world.

In the 1970s, the new generation of people which came of age has not been politically active, and for good reason, Taylor continued. It discovered that a President of the United States was a crook, and students have been unable to find in the 1970s public figures whose values they can approve and whose political careers they can help support. There is a deep-seated cynicism among students at present, Taylor said, and he deplored the popularity of a movie like "Animal House," in which crude, self-indulgent young people are making pigs of themselves. "It is coincident with the kind of attitude that the President of the University of Colorado and his Board took when they managed to find a quarter of a million dollars to buy the Patriots' football coach and put him to work for the University of Colorado. That is just rotten, dishonest education, and it's of one piece with "Animal House", with the animals running loose in the fraternities again. I thought that was all over in the jazz age, but it's back, and people are celebrating those homecoming weekends — all those terrible things that I thought we had dropped out of American educational practice . . ."

Dr. Taylor said American universities have often unfairly attracted foreign students without taking precautions to assure that they are well-received by their communities. This kind of insensitivity, combined with more student cynicism and a return to the kind of pranks that were characteristic of the earlier periods, caused Taylor to conclude that the situation for higher education institutions is serious. But some students are moving beyond cynicism to a deep kind of criticism and to some activism, though it is not well organized. "There is a kind of powerlessness just now which is having the effect of driving students away from politics and away from social action . . .

"I find my colleagues around the country in the faculty memberships of the universities and colleges share the cynicism about political action with their students. So we have a kind of stalemate in terms of the places where one would hope fresh thinking, fresh acting would come from . . ."

Unless faculty members can provide some guidance for the students, there is no other reasonable source for them to turn to, Taylor said, and although there is a need to rebuild the contemporary curriculum with "philosophical underpinning," the tendency of faculties is to engage in "horsetrading" to protect their own courses and hours of teaching. He deplored the decline in emphasis on humanistic studies, and he concluded with a challenge:

> The issues that have to do with the future of the human race and the future of America's relations with the rest of the world in the next ten years are not being raised in the courses taught by my colleagues. To me, the college presidents, the deans, the provosts, the administrative officers and the faculty members must take as the most serious responsibility they have . . . , before they even look at the budget and worry about the budget cuts . . . the necessity of bringing these issues of the world order and the future of the human race directly into the middle of that curriculum which we are offering to this generation of students.

The discussion of Dr. Taylor's remarks by a panel on the following day was somewhat discursive. Some questioned Dr. Taylor's generalizations about the generations of students and offered amendments to his thesis. The panel was larger than the others arranged for the conference, and comments ranged from a criticism of Taylor's writings and ideas to reflections on the tensions of the 1960s and descriptions of past and current events on other campuses. Taylor had made remarks deploring the fact that the humanities are no longer generally assumed to be a vital part of a university curriculum, but there were few direct responses to that assertion.

Among the commentators, Dr. Wayne Vucinich of Stanford University did most to remind the audience of the essentially democratic nature of American education. No other country offers such a wide range of educational opportunity to all levels of society, and the immediate concerns of society are often mirrored in the schools in a short time. He identified himself with Taylor's wish that more humanistic concerns, a more "spiritual element," or "philosophical underpinnings" could be introduced into the curriculum, and he challenged Taylor to develop his ideas about how this might be done.

It was significant that both the panel following Dr. Marshak's remarks and that which responded to Dr. Taylor's remarks grappled with the problems of how to achieve a better level of student understanding of the values-aspects of our own and other societies, but did so without reaching a clear agreement. Dr. Taylor regretted, and several commentators seemed to agree, that the tendency in recent years has been to abandon certain values-oriented core courses in the university curricula, but it was noted that in some major institutions such as Columbia and Stanford, basic courses on civilization and literature are being restored or reinforced after a period of dilution of such programs.

Dr. Robert Gorrell, recently retired Vice President for Academic Affairs at UNR, provided a kind of terse penultimate contribution to the discussion of Taylor's remarks by saying:

> I think that we are not going to solve the problem of the crisis in values by instituting a course in values. I think that probably the best curriculum is a good teacher. I think that a good teacher is a learned and honest human being, so what I want is our students to be exposed to honest and learned human beings who are teachers . . . and if they cannot get a sense of values from that, then maybe it doesn't matter . . . there is no hope.

Dr. Taylor concluded with the observation that there *is* hope, and he emphasized the importance of having a kind *esprit de corps* among the faculty who are dedicated to making a campus a better place to be, intellectually and socially, for the students as well as themselves. New attitudes about the extension of educational advantages to minority groups and women give reason for hope that a dedicated faculty can enlarge the service and the realm of the educational process.

The Bestor Dialogue

The last of the four speakers was Professor Arthur Bestor, Professor Emeritus of History from the University of Washington, who joined the conference belatedly after Professor Daniel Bell of Harvard University had to withdraw for medical reasons. Dr. Bestor's remarks and the panel which followed them focused on the traditional role of the university as the preserver, transmitter, and developer of culture. Dr. Bestor's title was "Compass or Weathervane? — The University's Role in a Time of Crisis." He initiated his remarks with a metaphor:

> Two simple, ancient, useful devices exist to provide us with instantly available information about the physical world around us. One is the weathervane, which tells us, moment by moment, the direction the wind is blowing. The other is the compass, which tells us, amidst the swirl of the weather, which way is still north. Both can provide us with valuable guidance in plotting our course, provided they are appropriately used. If we are planning to take off from a runway in an airplane or to tack our way in a sailboat, the weathervane furnishes the information most valuable to us. If we are navigating a ship to a distant port or reading a map in the wilderness, our safety may depend on a compass, and a weathervane will do us precious little good. Note, furthermore, that both devices are mere curios if we are determined to hole up in a storm cellar and stay exactly where we are.
>
> Which is the model that an institution of higher learning should follow? We may dismiss at the outset the idea that it can dispense with both kinds of device by standing pat where it is. To do so would be to forfeit the respect and ultimately the support of society. To do so would destroy any chance of attracting able minds to serve on its faculty or intellectually-alive students to sit in its classrooms. The university must respond and respond effectively to the forces that are operating in the great world, that are changing the great world — yes, that are producing crises in the great world. The question is not whether the university should face up to the facts of a changing world, but whether it should respond by attempting to follow the gyrations of a weathervane or by laying out a rational course with the stable guidance of a compass.

It was obvious that Dr. Bestor believed that the university should most often rely upon the compass, orienting itself by means of the tested procedures and values in most cases. An institution that has a long history is one that knows how to deal with change, he argued: "The fact that the modern university can show an unbroken continuity of development from beginnings in the late Middle Ages is the very best reason for believing that it knows how to deploy its forces to deal with, not to run away from, the problems of a changing — indeed a crisis-ridden — society."

The values and procedures that Bestor recommended were those of a serene humanist. He introduced references from Socrates and quotations from Thucydides to underscore his points, and he dwelt at some length on the necessity for teachers and students to work together in research enterprises so that the latter may develop systematic methods of inquiry: "The word 'education,' as my revered father was fond of pointing out, derives from the Latin prefix *e-* (out from), coupled with the Latin verb *ducere* (to lead or draw). Etymologically speaking, 'education' can not be construed as 'pouring into'; it can only mean 'drawing out'."

Bestor's presentation was largely an argument for building or restoring a curriculum that seeks to do this by traditional methods and subjects.

> If it is the tools of thought, rather than information, with which an institution of higher education should furnish its students, what must be the qualifications of those who give instruction? It is obvious — at least to most people — that anyone who offers to impart information must possess the information to begin with, and that anyone who proposes to train someone else in a particular skill — whether it be repairing an automobile engine or extracting a square root — must be able to do the job himself. By the same token, if the aim of higher education is to draw forth the student's potential ability to think a problem through — to apply disciplined intellectual methods to the answering of questions that may never have been answered before — then the university teacher must himself have demonstrated his own ability to venture into the unknown and to bring forth, by application of disciplined intellectual procedures, a set of conclusions that satisfy the criteria of science or scholarship. To use a word that is in ill-repute in some circles, research is an indispensable element in the preparation of anyone who is to be a professor in an institution deserving of the label "higher education."
>
> A genuine university is necessarily a research institution,

> but only in part because the results of research are useful to society. A university is a research institution because research in the broadest sense is what the whole university community — students and faculty alike — are engaged in. They are practicing side by side the art and science of probing to the roots of an intellectual question and applying reason to it in the hope of attaining the kind of understanding that will stand up in theory and be applicable to practice.
>
> The subject of this conference is the present-day crisis in values, and the meaning of this crisis for higher education today. The use of the noun *values* (in the plural), with the sense it has in the title of this conference, is a relatively new usage. The *Oxford English Dictionary*, in the fascicle published in 1916, records no passage in which the word was employed with exactly the meaning familiar to us, which I take to be: "the principles (especially the moral principles) which we accept, or which we believe ought to be accepted, as guides in our personal lives or in the collective life of society at large." All too often, it seems to me, these values are thought of as principles to be imposed from outside on the ordinary — and wayward — activities of men and women, rather than as principles inherent in all well-ordered activities, needing only to be recognized, extolled, invigorated, and thereby more firmly established.
>
> From this point of view, institutions of higher education appear to me to make their best contribution in this time of crisis in values by emphasizing even more strongly the qualities of mind and character that it must necessarily bring out in its students if it is to carry out its own educational mission successfully. Freedom from bias in the quest for evidence, honesty in applying the tests of logic, humility in presenting conclusions — these are virtues to be cultivated and cherished. To accept them as guides is to accept a set of values.

Dr. Nancy Joyner, national vice president of the American Association of University Women, like several speakers in the conference, reflected on the tendency of contemporary universities to introduce a wide range and variety of new courses in response to social developments. "Let me ask whether or not we can perceive from Dr. Bestor's remarks that the university — or an institution of higher learning — is reactive or proactive. My experience indicates to me that we are very much reactive institutions, and that we do not frequently have the kind of wisdom and vision to look forward and to determine what values we are preserving . . ."

There is a danger that economic consideration will destroy the sense of values that universities are expected to serve, Joyner said. Economic factors have played too great a role in setting educational policies. The proliferation of continuing education courses of both the credit and non-credit variety has often resulted directly from a desire to attract students and to put more money in college coffers rather from a desire to perform the mission of a university. When research is often conducted within the universities because of the "publish or perish" concept, Dr. Joyner said, and not in response to the high ideals of the profession, there is much less joy of learning than there should be.

The remarks of Dr. Gary Peltier of the College of Education of the University of Nevada-Reno tended to reinforce the thesis of Dr. Bestor about the need to chart a course by well-established standards. Dr. Sterling McMurrin, Professor of Philosophy at the University of Utah, raised a warning about trying to find "absolutes" by which to chart the course of an institution of higher education. The university should in some measure be a function of the culture, he said, but subsequent discussion revealed that he was not dissenting from Professor Bestor's thesis that the university should more often follow the "compass" rather than the "weathervane."

Judge Bruce Thompson of the U.S. District Court for Nevada offered a partial summary of the ideas of the conference from his perspective. He had attended every session and had participated in some of the question-and-answer periods. The son of one of the founders of the university's philosophy department and a former member of the Board of Regents, he brought to the conference a long record of dedication to the educational process and a keen judicial intellect, although he characterized himself as a lonely layman among academicians more knowledgeable than he. Judge Thompson reiterated that the universities were the best institutions to seek solutions for current problems. He offered a list of values that he regarded as immutable basic objectives for an institution of higher education:

1) The development of self-respect in every student. Without respect for his own worth, a student will be lost in a rapidly changing society. He questioned those remarks of Dr. Taylor which had suggested that the student rebels of the 1960s were engaged in social reform. Dr. Taylor, Judge Thompson said, overlooked the self-degradation of many of the young people of that period, and he lamented the self-destruction in cases of excessive drug use.

2) The university has an obligation to develop a respect in students for the integrity and dignity of every individual human being.

> This is a value that in my mind has to be drummed home time after time. Immanuel Kant . . . said in effect that in all your associations with your fellow human beings, you should treat them always as an end and never as a means. In my career through the public school system and the universities, I only heard that once, and that was in my father's philosophy class . . . It is the responsibility of the university to teach this to every student who matriculates . . .

In the field of the law in this country in the last thirty years, Judge Thompson said, "giant steps have been taken in the implementation of this concept of the importance of human liberty and the privileges of human citizenship and the rights of human beings, and they have been more and more strongly supported and recognized." It should be a continuing effort of the university, he said, to reinforce this precept of human worth — which Kant enunciated two centuries ago. Professional colleges, such as engineering and business, should be encouraged to stress such values.

3) The institutions of higher learning should cultivate respect for our government and our public institutions. Dr. Taylor's address suggested that if there is a crisis, it is in the lack of respect for our institutions. The scholarly process is by its nature critical, and the academic mind tends to be critical of society's institutions. Intelligent criticism is necessary, but we have too few courses that are strongly supportive of our form of government. University professors tend to be negative, and they tend to take for granted the remarkable democracy — or republic — which has served the country so well, even through a challenge as serious as the Watergate crisis. If the educational institutions would undertake to cultivate these values, many of the problems which we identify in our crisis would disappear, the judge argued.

Conclusion

The conference provided the university and a significant representation of the public one of the best opportunities in recent years to reassess the institution's commitment to the traditional values of society and to discuss some of the newer values — or the chaos within the value-patterns — of contemporary society. It brought some of the most vigorous statements on behalf of humanistic disciplines and concerns heard on the Reno campus for many years.

Footnote

[1] Support for the conference was made possible through the cooperation of the Graduate Council, the College of Arts and Science, the Corporate Giving Board, the Research Advisory Board, and the UNR Alumni Association. Matching grants were made available by the Nevada Humanities Committee and the National Endowment for the Humanities.

James W. Hulse, Professor of History at the University of Nevada-Reno, has been a member of the faculty since 1962. He is a former Reno newspaperman and the author of four books, two on European history and two on Nevada. He was chairman of the Graduate Council in 1979-80. He received his Ph.D. from Stanford University.

A History of the Community College Movement In Nevada

by John A. Caserta

Nevada Community Colleges Become a Reality — 1966-1970

From 1864 until 1967, the lagging population growth and slow industrial progress in Nevada did not trigger any great demand for special education or vocational training needs which could not be met by the local school systems or the University of Nevada System. A need for comprehensive community coilleges was not felt until the late sixties.

In the 1966 campaign for governor, Paul Laxalt became the first major political figure to broach the concept of a state system of community colleges, when he included the establishment of community colleges as part of his campaign platform. After becoming governor in 1967, Laxalt appointed a Governor's Council to determine the feasibility of community colleges in the state. That same year, the citizens of Elko banded together and raised funds totaling $44,356 to launch Nevada Community College. Tribute must be paid to the citizens of Elko. Not only was the University of Nevada first established in Elko in 1874, but in 1962 Elko business and community leaders attempted to establish a junior college by offering land to the Board of Regents for such a college in Elko. Even though this effort was unsuccessful, Elko citizens established Nevada's first public community college on their own in 1967.

Elko leaders recognized that they could not support a community college from private funds. Thus, Assemblymen Norman Glaser and Roy Young of Elko joined Governor Laxalt in the 1968 special legislative session in attempts to get community college legislation passed. This effort came to no avail, primarily because of concern that community colleges would further dilute funds badly needed by public schools and the universities.

The governor immediately began working with Assemblyman Glaser to present Assembly Bill No. 22 which required no funding but allowed the Elko Community College to become a function of the Elko School District and permitted the Elko trustees to accept gifts or grants from any source. The bill, which also called for the State Department of Education to launch a feasibility study for community colleges, passed both houses without dissent on February 26, 1968. The community college concept had been salvaged and the groundwork laid for dramatic future development.

The first major development was a donation of $250,000 contributed by Howard Hughes in May, 1968. Without solicitation, Hughes volunteered the gift with the specification that half of the amount be used for the continuation of Elko Community College and the other half to fund a legislative study on the feasibility of community colleges for Nevada. It was the Hughes money, coupled with the leadership of the governor and others, that resulted in the establishment of community colleges for Nevada.

The Board of Regents, at its February, 1969 meeting, made the community colleges a division of the University of Nevada System. Chancellor Neil Humphrey was authorized to develop organizational and basic program plans in conjunction with Governor Laxalt, State Superintendent of Public Instruction Burnell Larson, and officials of Elko Community College.

A nationwide search began for the president of the new division and, in 1970, Dr. Charles R. Donnelly arrived from Flint, Michigan, to become the first and only president of the Community College Division. Dr. Donnelly was made responsible for the development of a state plan for community colleges and for the activation of new colleges in Reno, Carson City, and Las Vegas.

By February, 1971, a bill had been passed which directed the conveyance of 200 acres of state-owned property to UNS for a community college and led to Western Nevada Community College's first building being located in Carson City rather than at Reno.

Also in 1971, Assemblyman William Swackhammer introduced Assembly Bill 459 which created a Higher Education Construction Fund with receipts from the slot machines tax. Expenditures from this fund were authorized only for construction projects for the University of Nevada System. AB 459 gave priority to construction of Clark County Community College for the 1971-73 biennium. Coupled with a congressional amendment to the Tax Reform Bill which stipulated that 80 percent of the revenue obtained from the slot machine tax would be returned to Nevada, this bill was a boon for the community college movement.

First Years of the Community College System, 1971-72

In 1971, Elko Community College was the oldest of the three community colleges comprising the new division. It was the first of the colleges to have all five occupational areas in operation: agriculture, business, health, industrial, and public service. Elko also had another unique "first" — it was the first institution of higher education in the state to have a senior citizen center established on campus. The college also established outreach centers in Winnemucca, Wells, and Ely. Western Nevada Community College began its operations in the Civic Center building in Carson City; its outreach centers serviced Reno, Stead, Fallon, Yerington, Hawthorne, Incline Village, and Zephyr Cove. Clark County Community College, whose initial operation occupied the old Las Vegas Review Journal building and Skill Center in Las Vegas, had outreach classes extending to Boulder City.

The Board of Regents chose the location of the first community college campus site in Clark County to offer excellent access to the lower economic groups of Las Vegas and North Las Vegas. The black community had been concerned that the college be located near their own center of population, and their concern was borne out by figures which indicated that 23 percent of the enrollment on the downtown campus came from minority groups and that 83 percent of the students enrolled at the Skill Center were from the black community.

Enrollment in 1971-72 for all three colleges amounted to 589 FTE (using the base that 16 credit hours equals one full-time student equivalent).

In April, 1973, the college at Elko moved into the state's first new community college building — another "first." At the same time, the college received a new name, Northern Nevada Community College. Probably the most significant event of the 1972-73 year was the transfer of the Washoe County School District's adult education program to Western Nevada Community College. This action accounted for a 716 percent increase in headcount and a 355 percent increase in FTE, thus providing a much-needed base for funding.

The search for a location for the new Reno campus resulted in selecting property adjoining the Desert Research Institute site north of Reno. The regents were influenced by the fact that costs would be restricted to site development expenses and, also, by the fact that in view of Carson City having its own campus, there was not a need to have the community college located where it could serve both Reno and Carson City.

Clark County Community College did not receive the initial support from the school district which western Nevada had enjoyed. Despite the support of Dr. Kenny Guinn, Clark County School District Superintendent, the Board of Trustees was concerned about possible dilution of school funds and the college's possible threat to the success of the recently completed Southern Nevada Vocational Technical Center. For these reasons the board would not transfer their adult education program to the community college.

In December, 1972, President Donnelly had made a public commitment to keeping each community college in the system under 5,000 full-time equivalent enrollment and maintaining the two-year identity of each college, and he reiterated these commitments in June, 1973 to allay fears that the community colleges wanted to become four-year institutions. The community colleges had opened the 1972-73 school year with attendance nearly triple that of the first year, and statewide FTE reaching 1,413. The rapidly expanding enrollments were a cause of concern to university staff people and legislators who expressed fears of competition for scarce financial resources.

President Donnelly was a strong supporter of community education; he mandated that college credit be given for the college's community service courses and that these credits be made applicable toward the Associate of General Studies degree as general electives. Donnelly initiated meetings among educators and lay people to explain the community education philosophy and the community school structure.

The well-attended ground breaking ceremony held in Fall, 1973, for the Carson campus of Western Nevada Community College gave evidence of the strong community support for the community college movement. Another notable event was the bringing into use of the second new building on the Elko campus; dedication for both of the new buildings took place on Saturday, September 8, 1973.

Conflict between the universities and the community college regarding university parallel courses developed in February, 1974, when the University of Nevada Arts and Science Ad Hoc Committee on Articulation Problems recommended to Acting President Dr. James T. Anderson that no university parallel courses be taught in the community colleges in the Reno-Sparks area, including Stead, and in the Las Vegas area, on the grounds that such courses were being offered already by the universities. Strong sentiment against the proposal was voiced by Community College division President Charles Donnelly and other system officers. The Board of Regents referred the matter to the Chancellor's Cabinet, which developed an approach to the problem that was acceptable to all concerned. In March, 1974, Senator Cliff Young raised the question of the intent of community colleges in regard to building athletic facilities for football and other group sports. President Donnelly responded that there was no intent to build stadiums and engage in intercollegiate sports; he emphasized the community college's main emphasis in athletics would be toward intramural programs and physical activities which students could pursue on a lifelong basis.

In May, 1974, Northern Nevada Community College received full accreditation from the Northwestern Association of Secondary and Higher Schools.

Clark County Community College occupied its first new building in North Las Vegas on the Cheyenne campus. However, the more significant event of the 1973-74 school year was probably the transfer of the adult education program of Clark County School District to the college. The result was a doubling of enrollment with an increase from 1,530 headcount to 3,249 headcount for the 1973-74 school year.

Clark County Community College also began to promote concern for educating persons having handicaps. Clark County Community College also led the way in the development of flexible scheduling, a characteristic of community colleges deemed by many to be one of their major reasons for success.

Despite the fact that the State Plan for Community Colleges called for the establishment of community service courses, a number of legislators challenged state financing of special interest courses desired by adults in the community. In compliance with a mandate from the legislature, President Donnelly issued a policy memorandum making community service courses supported only from registration fees. Credit for community service courses would be applicable only to the Associate in General Studies degree.

Also in response to the 1975 legislature, the Community Education Center, which had been housed in the

Community College Division office in Reno, was transferred to the State Department of Education in Carson City on July 1, 1975. The leadership role for community education passed to the public school system and the State Department of Education.

The question of a separate state board for community colleges was raised in September, 1974. Norman Glazer and the Elko Community College supporters had never abandoned their desire for a separate state board; they had only agreed to being placed under the umbrella of the Board of Regents as a matter of expediency in order to get their community college started. Governor Laxalt, from the outset, anticipated eventual evolvement into a separate governing body for community colleges. Consequently, the issue kept being raised, but no formal action was taken by the regents.

Another controversy between university and community college personnel occurred when the lower registration fees at community colleges (especially for college parallel courses) was questioned by some university personnel. In 1974, the Community College Division began to serve more headcount students than either one of Nevada's universities and became the largest division in the University of Nevada System. This development was perceived as a threat by some legislators and university personnel; the ideas of raising community college fees was, in large part, a reaction to that threat. The Community College Division and Western Nevada Community College administrators vigorously opposed this recommendation, placing emphasis on the fact that raising the fees would deny access to higher education to many students who tended to be older individuals with families to support. The regents rejected the concept of raising community college fees, and this issue has not surfaced again.

On the financial scene all was not well. Although the budget recommended by Governor O'Callaghan provided a 20 percent increase, it actually represented a 34 percent decrease from Western Nevada's request. The decrease was caused by the fact that the student-faculty ratio was to be increased from 20-1 to 24-1. This ratio posed a hardship because occupational courses requiring specialized equipment could only accept limited numbers of students. The State Board of Nursing specified a ratio of 15-1 for nursing programs, and smaller county centers would have great difficulty supporting classes on a 24 to 1 student-faculty ratio, simply because of the small number of people in such areas.

The problem was further compounded by the fact that federal vocational education monies were included in the regular biennium budget rather than being placed in a category separate from the state appropriation. The net result was that the college would be receiving approximately $200 less support per FTE student than it had been receiving in the 1974-75 budget.

Western Nevada Community College was also facing another problem. Although the 1975-77 budget provided for a 47 percent increase, the actual increase in enrollment over the preceding biennium was 163 percent. A repetition of that growth rate would trigger critical financial problems.

The enrollment of Clark County Community College was also burgeoning, reaching 2,768 FTE. The faculty and students had not even settled in their new quarters when it became evident that a second college campus would soon be needed. Regent Bill Morris, before a special meeting of the Board of Regents and the Nevada Public Works Board in September, 1974, proposed a second campus on government property located at West Charleston Boulevard and Torrey Pines.

In the spring of 1975, Clark County Community College made a push in another new direction — a step which would lead to the second community college for Clark County being established at Henderson rather than the Torrey Pines campus. Under the direction of Betty Scott, Henderson coordinator, a pilot program was started which would offer three liberal arts courses and one community service course in addition to the ongoing Spanish culture program which the college had been sponsoring.

Problems of articulation between the community college and the universities continuously arose. President Donnelly and the community colleges resisted a new course numbering system proposed by the articulation board to aid in the transfer process between the community colleges and the state's two universities. Donnelly argued that (1) the proposed numbering systems would separate and divide faculty and programs; (2) the numbering system proposed would demean the community service and developmental courses and that insufficient numbers had been alloted for community service courses; and (3) all occupational courses offered by the community colleges should be accepted at some four-year college or university somewhere and that all general education courses taught at the community college were of baccalaureate level. Donnelly also challenged the uneven representation on the articulation board. He noted that in the instance of the proposed numbering system, the vote was four university members voting for the new system and two community college representatives voting against it.

The Board of Regents generally supported Donnelly's arguments; the net result was that a different numbering system was adopted rather than the one proposed by the articulation board and one more community college member was added to the articulation board.

Two additional issues presented themselves at the first statewide meeting of all citizen advisory boards called by President Donnelly in May, 1976. Dr. Marvin Sedway from Las Vegas requested (1) that the group issue a statement endorsing intercollegiate athletics in community colleges and (2) that consideration be given to having a separate statewide board for the governance of community colleges. Sedway's first issue was submitted to the individual advisory boards. There was general consensus that there should not be a separate board at this time although such action might be desirable at a later date.

In May, 1976, the one-year trial program allowing White Pine and Elko county high school seniors to enroll in the community college was adopted permanently by the Board of Regents. Nearly 100 White Pine students and approximately 70 Elko students had enrolled in the program during the 1975-76 school year.

For Western Nevada Community College, the most important event of the 1975-76 year was action taken by President Donnelly to separate Western Nevada Community College into two colleges. The college would still have one identity, but it would consist of two separate campuses, each having its own administrative staff.

budget and responsibility for its actions. One significant advantage would be that the Reno-Sparks campus could concentrate on occupational education while the Carson campus could concentrate on better service to the rural centers.

The Board of Regents approved the reorganization on April 2, 1976 and steps were taken to create two separate administrative structures. This action later became a problem with legislators because they had not been adequately informed as to why one college had so many administrators.

Western Nevada and Clark County Community College received accreditation in December, 1975. In the short period of four years, all of Nevada's community colleges had received full accreditation.

It was on October 1, 1975, that a site feasibility report recommended the establishment of the Torrey Pines Campus in West Las Vegas. Notwithstanding the great odds against them, the Reverend Caesar Caviglia, pastor of St. Peter's Roman Catholic Church in Henderson, and Regent James Buchanan (elected from that area) launched an effort to establish the second community college campus in the vicinity of Henderson and Boulder City.

From the initial enrollment of 98 persons in the spring of 1975, there were now nearly 300 students attending 14 courses taught in Henderson's Roman Catholic church, the Civic Center, and Basic High School. This increase indicated the desire of Henderson and Boulder City residents for college classes in their own area. The City of Henderson also set aside 80 acres of city-owned land at the lowest possible price permitted if the second campus would be built in Henderson.

Clark County Community College's total enrollment of 7,040 headcount students was almost on a par with the University of Nevada at Las Vegas which had enrolled 7,621 students. CCCC also continued to outdistance Western Nevada which had a headcount of 6,246.

As President Donnelly entered the 1976-77 college term, the success of the community college system was a matter of pride to him — he had taken a new system and developed it into a structure which rivaled the University of Nevada in numbers of students served. Little did he realize the upheavals in the community colleges that would occur during this year. When the governor sent his proposed budget to the legislature, the budget, which contained major cuts, quickly elicited outspoken criticism from Donnelly and other community college supporters. Governor O'Callaghan then recommended that eight positions be abolished in President Donnelly's office and that Donnelly and a small staff be transferred to the chancellor's office. A temporary victory for Donnelly ensued when the Senate Finance Committee voted to keep the reduced community college administration intact rather than merge it with the chancellor's office.

Ripples from the budget rift spilled over into the controversy as to whether or not there should be established a separate state governing board for community colleges. Because of university system budget-cutting procedures, instituted when O'Callaghan recommended a $120 million budget as compared to the $138 million budget requested, there emerged a feeling among some community college staff and supporters that the university system had not dealt fairly with them. There was also the feeling prevalent that the university system may not have presented adequately the financial condition of the community colleges.

Another event giving momentum to a separate governing board for community colleges occurred on January 11, 1977, when a contingent of community college supporters, some of whom had traveled from Reno and Elko to Las Vegas, were denied access to speak before the Board of Regents by Chairman Buchanan.

The community college supporters were infuriated and from this group Dr. Marvin Sedway of Las Vegas emerged as prime spokesman for support of Senate Bill 389, which would have created an autonomous governing board for community colleges. Sedway also produced correspondence from Paul Laxalt which confirmed that separation of the community colleges from the university system (when the colleges matured) was an original concept held by both Laxalt and members of Elko's first community college committee. The hearings in April, 1977 led to retaining the single structure for the administration of higher education; however, rumblings from legislators and educators left no doubt that the issue would surface again in the future.

Some of the loudest rumblings came from President Donnelly who, at the May community college graduation ceremonies held throughout the state, openly criticized the governor and the legislature. The Board of Regents, in a surprising move in June, 1977, then abolished the Community College Division presidency and offered Dr. Donnelly a teaching position with the community college. Board Vice-Chairman Molly Knudtsen of Austin stated that the decision was purely a financial one made in the wake of the legislature's elimination of nearly all of Donnelly's central office staff members which left him to function merely as a figurehead. The regents came under fire because official statements and press releases from the University of Nevada System gave the impression that the abolition of Donnelly's position had been finalized. Larry Lessly, General Counsel for the regents, explained that the regents should have first amended the by-laws and codes to accommodate abolishing the president's position.

The community colleges in Nevada now had a headcount enrollment which exceeded the two universities. Statewide enrollment for community colleges was 16,004 while statewide enrollment for the two universities was 15,922. Western Nevada Community College had moved into its first new facility for the Reno-Sparks area in December 1976. When the Nevada State Legislature convened in January, 1977, it approved an addition which would more than triple space to provide instruction in a variety of occupational programs.

Elliot Lima, Western Nevada Community College administrator in charge of the Fallon Center, was receiving strong support and urging from Fallon citizens to seek a building and campus to serve that area. This effort received increased impetus in Fall, 1976, when the college was able to start a day operation in the abandoned Oats Park Elementary School. Senator Carl Dodge's strong efforts and those of the Fallon community did not bear fruit at the 1977 legislature, but they did not admit defeat. While Dodge was not successful in getting a campus established at Fallon, it was primarily through his efforts and those of Assembly Speaker Joe Dini that the legislature recognized a rural financing factor. Special funding was provided for health education in Yerington and Fallon, and a rural factor was added to the financing formula for Western Nevada Community College.

Controversy was also present in Las Vegas, where the issue of a second campus had split the regents, legislators, and the community. Regent Buchanan was supporting the Henderson site; Regent Fong and Dr. Marvin Sedway, chairman of an advisory site-selection committee, were supporting the Charleston Heights location, and other individuals such as Senator Floyd Lamb of Las Vegas were questioning the need for more community college campuses.

Governor O'Callaghan was opposed to new campuses and had not recommended either the Henderson or the Fallon campus in his budget; however, he did recommend $6.9 million for the new Western Nevada Community College addition in Reno and $1.3 million for additions to the community college in Carson City.

The Henderson City Council, encouraged by the regents' approval of the Henderson campus as a possible alternate site, made 80 acres of land available for the new campus at cost. Prominent Las Vegan Hank Greenspun generously offered free land for a community college in the area of Green Valley, thus adding impetus for an alternate choice to the West Charleston campus site. The Board of Regents, however, went on record as supporting only the West Charleston Boulevard campus and Fallon sites, since the West Charleston site could be funded without state general fund money. This strategy was to no avail; the Senate Finance Committee axed all proposals to build any new community colleges.

Restructuring of Community College Administration

In October, 1977, the Board of Regents took appropriate action to change the by-laws and University System Code and thereby place themselves in a legal position to eliminate President Donnelly's position. Each of the community college vice-presidents was elevated to president and would report directly to the board. Also approved was the addition of a community college coordinator to Chancellor Donald Baepler's staff to help coordinate relations among the three colleges.

Regents Fred Anderson and Louis Lombardi argued against the abolition of the CCD presidency, as did members of the Northern Nevada Community College Advisory Board who asked the regents to maintain the presidency of the community college division. Also, Stan Aiazzi, Chair of the Faculty Senate at Northern Nevada Community College, said his group had voted overwhelmingly against the proposed code changes. Interim Chancellor Baepler concluded the discussion with the comment that the concept of a single president had been extremely useful in the development of the community college system and had contributed greatly to its progress, but that the time had come for a change.

Regent Brenda Mason also raised the question of splitting Western Nevada Community College's Reno-Sparks and Carson City campuses into two separate colleges. JoAnne Dain, Western Nevada Faculty Senate Chair, made a plea for separation, but the question was tabled.

Dr. Baepler, interim chancellor, told a legislative subcommittee that he opposed a separation of the university and community college systems. The subcommittee was charged by the 1977 legislature to look into the future needs of the state's community college system. Senator Glaser said that he still felt that the regents might not understand the philosophy of the community colleges. No changes ensued, but the issue of separation did not die.

In April, it was finally determined that separation by legislation was legal. A letter to Senator Norman Glaser from Frank W. Dakin, Legislative Counsel Bureau, so indicated, but it also stated that the Board of Regents could not be required to accept community college credits if such separation occurred.

In August, 1977, Western Nevada Community College had its first registration in its new facility at 7000 Sullivan Lane. The college was placing increased emphasis upon problems of the handicapped. Classes for the deaf and classes for wheelchair students were offered by the Community Services Division, while the staff of the student services area had begun an in-depth study of the problems of handicapped students and displaced homemakers.

Western Nevada Community College's Fallon center was a hub of citizen activity in the spring of 1978. A group of citizens banded together under the title "Community Concerns" and prepared a survey in support of a permanent community college facility in Fallon.

The Henderson Center of Clark County Community College experienced a 17 percent increase in spring semester enrollment which, coupled with the Board of Regents earlier approval of the purchase of land in Henderson for a future campus, made brighter the prospect of a Henderson Community college facility.

Northern Nevada Community College received approval for a new program after a group representing the hospital and medical community of Elko urged passage of a new Associate in Applied Science degree in nursing. Board of Regents approval paved the way for nurses to be trained in Elko.

The Community College System, 1978-1980

One of the most significant events of the 1978-79 school year was the funding by the 1979 legislature of two new community college facilities — one at Henderson and one at Fallon. The legislature appropriated $1,924,000 for the Henderson facility and $851,000 for the Fallon facility. Efforts at the grass roots level in these two small communities had paid off.

The headcount growth record of the community colleges since 1971 continued its upward spiral, with 20 percent increase at Clark County Community College, an 11 percent increase at Northern Nevada Community College, and a 22 percent increase at Western Nevada Community College. The 1978-79 school year was also significant in that the Board of Regents approved a $5,700,000 construction program for the Reno-Sparks campus of Western Nevada Community College and a $1,193,822 construction budget for the college's Carson City campus. The two new additions were designed to make available new vocational training programs. Groundbreaking for the new 100,000 square foot addition to the Reno campus occurred in January, 1979.

Discussion of a consulting firm's 1978 study of community colleges, known as the Tadlock report, raised once again the issue of dividing Western Nevada Community College into two separate colleges. The WNCC Faculty Senate expressed the faculty's concern that the two campuses be divided into two separate colleges. They also recommended that the Community College Division office not be re-established, that some mechanism be created to expedite the adoption of by-laws for the colleges, and that the colleges be better represented on UNS committees. The regents indicated they would pursue these concerns and also approved Chancellor Baepler's recommendation not to re-establish a Community College Division presidency, but to provide for a Coordinator of Community Colleges.

The Tadlock report also triggered discussion on the concept of separating the community college system from the University of Nevada System. In March, 1979, Dr. Marvin Sedway of Las Vegas spoke on behalf of separation before the Senate Human Resources Committee, which was studying proposals to have the regents appointed, to shorten their terms, and to have a separate community college board and president. The move to separate, spearheaded by Senator Glaser, was unsuccessful once again.

The colleges were not without internal problems, as well. The Reno-Sparks area was facing a surge in minority problems, and WNCC's English as a Second Language program almost doubled in size within one year, reaching approximately 1,400 immigrants. Enrollment of immigrants and minorities in regular college programs also increased and it was necessary to appoint a committee on minority affairs. There was also the problem of lack of funding by the legislature for interscholastic community college programs. Although the Wildcat team had been a major contributor to the identity of the college, a decision was made to abandon this program in accordance with legislative intent.

Clark County Community College also reflected new growth. President Paul Kreider obtained approval from the Board of Regents for three new departments — Real Estate and Finance, Fine Arts and Communications, and English and Foreign Language.

As Nevada community colleges approached the end of their first decade of existence, they found themselves involved in a number of significant developments. Western Nevada Community College was divided by the Board of Regents in December, 1979. The Reno-Sparks campus became Truckee Meadows Community College, while the Carson City campus and its outlying centers retained the Western Nevada Community College title. James Eardley was promoted to become first president of the new college.

Truckee Meadows Community College was expanding both its facilities and its instructional programs. Business occupation classes had increased by 60 percent from 1976 to 1979. New majors were added in small business mangement, insurance, and hotel-motel management. Also, the business and mathematics departments were in the process of instituting a major thrust in computer-assisted instruction. The Community Education Division was offering over 100 classes as well as reaching another 1300 persons in its adult basic education program and approximately 1100 teachers in its school district inservice training program. In addition, Truckee Meadows Community College was undergoing a self-study in preparation for accreditation which it received in June, 1980.

Western Nevada Community College was in a building program at both its Carson City campus and the new Fallon campus. WNCC was also involved in self-study for accreditation and the development of new programs. In May, 1980, WNCC received the regents' approval for new two-year programs in Automotive Technology, Surveying Technology, Welding Technology, and Traffic Safety.

Northern Nevada Community College was preparing for a building program. Approval was received from the regents in March, 1980 to develop on-campus housing for NNCC students. This was an important development for rural students who could find no housing in Elko.

Clark County Community College found itself in a program of expansion and self-study for accreditation. In addition to the college's own remodeling and building program, it was involved with construction of the new Henderson facility. The college developed a new gaming careers program, a new outreach program to expand college classes to Boulder City, Mesquite, Indian Springs, Overton (Moapa Valley), Jean, and Pahrump in Nye County, and an Associate of General Studies Telecourse Degree in conjunction with Coastline Community College District and Nellis Air Force Base. New President Judith Eaton also found herself in the midst of an organizational restructuring occasioned by a mandate of the 1979 legislature that administrative costs be reduced.

The Board of Regents took a variety of relevant actions during the 1979-80 term. Upon the recommendation of Regent McBride, the Board dissolved the old community college division structure and eliminated the position of a vice-chancellor for community colleges, substituting a community college analyst in its place. Expressions of concern were voiced by some regents, especially in regard to standards, admission requirements, coordination and availability of staff expertise at a higher level. The board adopted the concept that the colleges should share information and expertise, and that there should be opportunity for rational diversity within a general policy framework.

The Board of Regents approved a collective bargaining election at the request of the Nevada State Education Association which was seeking to represent the faculty of the Community College Division. When the returns were counted in November, 1979, however, the request was defeated by a vote of 87 to 66.

The community colleges started the decade of the eighties on a positive note. The Max C. Fleischmann Foundation, which had given all three community colleges $100,000 each to start their libraries, now made generous donations to the university system and the community colleges when the foundation was dissolved on July 4, 1980.

In less than a decade, Nevada would have six separate community college facilities and could boast of strong community support. The cooperation between the school districts and the community colleges which had enabled the colleges to achieve so much so soon showed every sign of continuing. The news media had been supportive of the community college movement, and the many institutions and agencies with which the community colleges had been working continued to give their support and *cooperation.*

Two major hurdles remained to be overcome. One was the need for increased money to finance the rapidly expanding colleges at a time when "economy" was the by-word of every political platform; the second was the need to obtain consensus among legislators, educators and citizens of the state about the role and functions of its community colleges.

Reference

Caserta, John A. *A History of the Community College Movement in Nevada,* unpublished doctoral dissertation, UNR, 1979.

John A. Caserta is Dean of Adult Community Education at Truckee Meadows Community College. His B.A., M.A., and Ph.D. in Education are from the University of Nevada, Reno. Dr. Caserta has worked in education in Nevada for 30 years.

The Future of Community College Education In Nevada

by Judith S. Eaton

Introduction

The future of community college education in Nevada will essentially be determined by the respones to three major questions: 1) What is the mission of community colleges for the 1980s? 2) What are the funding opportunities for community colleges in the 1980s? 3) What lies ahead for governance of community colleges in the 1980s?

The community college movement within Nevada is young, healthy, and has experienced rapid growth throughout the state. In 1971, 1,740 students were enrolled in the state's two-year public institutions.[1] In the fall of 1979 this figure was 19,455.[2] This does not include those individuals within the community who may have pursued some of the many non-credit activities offered by our various institutions. The four community colleges in the state can anticipate additional growth in population and increased demand for services, programs, and access. The Nevada story is part of a nationwide successful picture of 1,230 community colleges which, in 1965, enrolled 1.3 million students and in 1979 enrolled 4.5 million. The number of these educational institutions almost doubled during this time period.[3] Half of all college freshmen throughout the country are enrolled in community colleges. These institutions are unique and reflect a national commitment to accessibility of education which is virtually unprecedented in western history.

Indications are that the community college movement will continue to grow and that prospective enrollments will reflect an increase in the number of students being served. This prognosis is made with particular comfort concerning sunbelt states, and includes Nevada, Utah, Arizona, and Idaho. While there is concern about the future of higher education institutions in general and significant warnings concerning the need to identify clientele, community colleges appear to continue as somewhat protected from the problems of economic recession, a limited youth population, and ongoing questions about the worth of educational undertakings.

UNIVERSITY OF NEVADA SYSTEM
Net Annual FTE Enrollments
1971-1980*

	1971-72 Actual	1972-73 Actual	1973-74 Actual	1974-75 Actual	1975-76 Actual	1976-77 Actual	1977-78 Actual	1978-79 Actual	1979-80 Actual
Clark County Community College									
Occupational	95	468	930	1,427	1,511	1,242	1,464	1,642	1,607
University Parallel	76	217	449	735	965	949	1,077	1,191	1,119
Developmental	3	35	50	284	264	276	173	195	307
Total CCCC	174	720	1,429	2,446	2,740	2,467	2,714	3,028	3,033
Northern Nevada Community College									
Occupational	89	76	117	114	140	145	152	155	207
University Parallel	99	66	106	160	180	186	199	203	220
Developmental	14	7	11	13	15	17	13	9	4
Total NNC	202	149	234	287	335	348	364	367	431
Truckee Meadows Community College									
Occupational	0	0	0	0	0	688	772	892	875
University Parallel	0	0	0	0	0	451	545	570	621
Developmental	0	0	0	0	0	49	70	78	72
Total TMCC	0	0	0	0	0	1,188	1,387	1,540	1,568
Western Nevada Community College**									
Occupational	118	306	812	899	967	389	383	432	431
University Parallel	91	221	434	646	903	267	312	350	371
Developmental	4	17	83	54	77	39	50	32	40
Total WNCC	213	544	1,329	1,599	1,947	695	745	814	842
Total Community Colleges	589	1,413	2,992	4,332	5,022	4,698	5,210	5,749	5,874

Headcount Enrollments
(Fall Semester)

	1971-72 Actual	1972-73 Actual	1973-74 Actual	1974-75 Actual	1975-76 Actual	1976-77 Actual	1977-78 Actual	1978-79 Actual	1979-80 Actual
Clark County Community College	541	1,580	3,249	6,011	7,040	7,273	7,893	8,825	9,121
Northern Nevada Community College	494	336	610	872	925	1,076	1,199	1,300	1,433
Western Nevada Community College South Campus**	0	0	0	0	0	2,165	2,543	2,752	2,542
Western Nevada Community College North Campus**	705	2,095	4,717	4,760	6,246	3,885	4,721	5,627	5,959
Community College Totals	1,740	4,011	8,576	11,643	14,211	14,399	16,356	18,504	19,455

*Official data from Chancellor's Office, Reno, NV.
**Prior to the 1976-77 academic year, WNCC enrollments were reported as only one campus.

Our Mission

Since 1965, community college mission statements have reflected the enormous demand of communities for programs and services, extremely rapid growth, and a strong commitment to equality of opportunity for all citizens. The 1970s, however, placed significant strain on these generally-worded, well-intended statements of purpose. The Viet Nam war, economic uncertainty, collective bargaining, public demands for accountability, and the rapidly changing job market all placed pressure upon ongoing commitment to bring education to as many people as possible. While community colleges should and will remain committed to an open door policy with service primarily in the areas of occupational education, general education (liberal arts/university parallel), and community service, the major challenge for our institutions in the next ten years will be to adequately define mission statements in order to serve carefully identified constituencies. National indications reflect increasing minority, female, and elderly enrollment within our institutions. National trends point to increased cooperative efforts with business, industry, government agencies, high schools, and four-year institutions. The community college is rapidly ceasing to function as a preparatory agency and increasing its function as a "partnership" agency as individuals identify, refine, and change careers and personal life styles. The effect of these trends on southern Nevada and the Las Vegas area will be the focus of this paper. Clark County is expected to double its population by the year 2000. We anticipate significant new job opportunities available in fields such as construction, health services, public services, energy development, and computer technology. National trends point to major growth in aerospace and airlines, television broadcasting, home electronics, aluminum, telephone and telegraph, computers and calculators, and health care industries.[4]

We expect to feel the impact of women and minorities moving into areas of technical training and making personal lifestyle changes which require educational services. As our population continues to grow, the demand for service from community colleges is likely to increase. Administrators and the state government will be faced with the fundamental question of determining the relative importance of direct instructional undertakings as distinct from service undertakings such as a Displaced Homemakers Center and Career Planning and Placement efforts.

The mission statement of Clark County Community College is intended to reflect not only a commitment to accessibility of educational opportunity for all individuals but also a careful analysis of the needs and desires of the residents of the district in which the college resides.[5] It reflects unique local characteristics, yet functions as a statement of educational philosophy. The primary focus of community college education is the community it serves. Mission statements of the community colleges within the state should reflect differences derived from the varying characteristics of their respective service areas. While we emphasize the mission of our colleges in terms of appropriate reaction to community need and desire, we should not lose sight of a strong need for an educational leadership role in our communities. Our commitment to the value of education and an educated society can manifest itself constructively in assisting those constituencies which comprise the "educationally neglected" to view education as a valued activity in their society. As Edmund Gleazer has stated:

> Is the college role limited to response or reaction to community needs, pressures, and requests? Or are there not more sophisticated services appropriate to the identification and analysis *and* proposed solutions? And further, should not the community college play a part in forecasting the shape of the society to come, and leading the community to understand the coming changes, making provisions for coping with them, and providing services to meet them?[6]

In order to develop mission statements which incorporate these elements of educational commitment and response to unique community needs, each of our institutions within the state must have access to adequate information concerning the needs and desires of its community. This requires effective institutional studies support for each of our colleges. The 1980s will demand that special effort be put forth by the community colleges and their governing board to carefully identify and thoroughly assess the educational requirements of the people of the state of Nevada. There has been limited attention devoted to long-range academic planning at the community college level within the state. With the shift of the community colleges from a division structure to autonomous institutions, it will be desirable to undertake institutional research efforts at a local level in order that information required for our institutions to meaningfully program in the 1980s is available within our specific service areas.[7] Thus while we may continue state-wide coordination of community colleges, we will need to focus increasingly on local efforts to meet local needs. We will need to pay less attention to comparisons of programs, funding, and organizational structure to arrive at sameness and more attention to differences based upon carefully documented need. While costly limited-enrollment programs such as Dental Hygiene should be coordinated at a state level, it is entirely appropriate that each community college "duplicate" each other's efforts in the offering of programs in areas such as automotive technology.

Articulated statements of purpose for community colleges remain somewhat meaningless unless they are brought to fruition by the efforts of professional staff, particularly management. Goals and objectives associated with our statements of purpose require careful attention to management, accountability, and structure. The 1980s should bring increased attention to sophisticated management techniques, management development, and a clarification of appropriate organizational structures for community colleges. The community colleges in the state of Nevada reflect to some extent the university structure rather than careful functional analysis of unique community college services to be delivered. The ability of community colleges to achieve their respective missions is further complicated by lack of clarification of what constitutes management within our institutions. While we may be pleased with the academic professionalism and collegiality reflected in the hiring of all staff as "faculty," we nonetheless have an obligation to specifically identify those with management roles within the institution and not confuse these obligations and responsibilities with teaching duties and other academic priorities. It is certainly valuable for administrators to teach, but their primary obligation is one of management.

Finance

The current method of funding community colleges within the state of Nevada is on an FTE formula basis with all public revenue deriving from the state legislature. While this approach to the funding of our institutions has provided for major success in the growth and development of our colleges, we have reached a critical point in size and complexity requiring major review of this fiscal approach. Clark County Community College in particular is suffering from the effects of rapid growth in the context of this funding approach. The present FTE formula funding approach does not adequately take into account the increasing numbers of part-time students enrolling in our institutions. It does not reflect that five students taking one class demand five times more service in areas such as admissions, registration, library, counseling, and career planning as one student taking fifteen credit hours. FTE formula funding does not provide for recognition of the unique characteristics of the student population of community colleges, but derives instead from a model relying essentially on full-time student enrollments. It is likely that the trend in part-time student enrollments will continue to effect both the community colleges and the universities with the state. Thus, a review of our funding approach seems appropriate.

Various states have employed alternatives to the Nevada approach. Some states employ a student credit hour (SCH) method of compensation for community colleges. They look at total student credit hours generated by all enrollments in a given term and provide payment of a dollar amount per student credit hour as compared to FTE. This provides a fuller remuneration for actual needs deriving from enrollments of our institutions. Yet other states employ a form of differential funding whereby they recognize differences in costs among community college programs. Throughout the country, health occupation programs (Dental Hygiene, Associate Degree Nursing, Respiratory Therapy) are the most expensive to offer. These are followed by limited-enrollment programs in the heavy technologies, such as automotive technology, which require specialized and expensive space. Many programs in business as well as many general education offerings do not require specialized space and can comfortably accommodate higher enrollments. Thus, costs in these areas are somewhat less. A number of states have developed funding categories such as "vocational" and "general," or have more specifically broken down vocational funding to reflect health, business, and technology areas. It would be of great value to Nevada to study the funding efforts of other states to develop an alternative to our current funding approach. Some combination of enrollment-driven funding with attention to headcount and program costs would serve the state well.

The current budgetary approach of developing the instructional budget based on formula funding and the rest of an institutional budget on an as-need basis is complex and militates against successful efforts of funding non-instructional areas such as student services. There appears to be a perception of the formula funding approach as more worthy of fiscal attention while the "as-need" approach is viewed with some skepticism. It would do well for our community colleges to budget on a model which reflects direct instructional costs and total institutional costs as well as taking into account all enrollments and the varying cost of instruction. This model will need to account for "nontraditional" program areas which also cannot be formula-funded. Examples of such programs are special contract programs with business and industry such as CCCC's Apprenticeship Training Program and our projected Air Frame/Power Plant Training.

Whether described as headcount (HC), full-time equivalency (FTE), student credit hours (SCH), or Average Daily Attendance (ADA), enrollment-driven formulas for funding are producing serious limitations for community colleges around the country. They work against the kinds of programs and services currently demanded by our publics: modular instruction, a competency-based orientation, variable-length curriculum, open entry-open exit programs, independent study, experience-based learning, programmed learning, and on-the-job training. Nevada can take a leadership role in community colleges by developing a funding model which reflects:

- agreement between the state government, Board of Regents, and the community college about the legitimate role and purpose of these colleges
- separation and identification of fixed and variable costs
- sound program cost information which is need-based
- incentives for cost effectiveness, community cooperation, and creative use of existing resources
- the ongoing impact of inflation

Our community colleges will continue to be primary vehicles for occupational training — but in modes and for clientele previously considered unusual. We are lifelong learning centers for the state, serving a diverse population with a strong convenience orientation and specific skill needs. CCCC enrolled 9,121 state-recognized credit students in Fall, 1979 for an FTE of 3,162 at a cost of $274 per student. This appears to be a modest state investment in community college education or ". . . to aid those in the community who want to learn how to secure certain basic necessities. Among those are: learning, health, employment, food, and citizenship rights and responsibilities."[8]

While many experts within the community college decry the failure of states to fund community service efforts, the dynamic quality of these programs and the rapidly changing clientele and offerings make it plausible that they remain self-sustaining. We should, in the 1980s, however, look to public funding of summer sessions at community colleges. It is the very nature of community college clientele to need services at any time during the year. The clientele is not adequately served in only a traditional Fall- and Spring-semester academic mode. If we were to move in the direction of state support for summer offerings, it should be within the same fiscal model developed for the rest of the academic year.

In addition to major attention in the 1980s focusing on alternative approaches to funding at the state level, we in Nevada should concern ourselves with sources other than state revenues for community colleges. This may take the form of local funding, private subsidy (individual or corporate), or federal assistance. Fiscal health of our educational institutions is more likely to be retained if we have a diversity of revenue sources. Our current national economic picture suggests that federal funding sources will be increasingly limited. With the establishment of foundations at each of the community colleges, we are just beginning to tap private revenue sources within the community and the state. Community colleges should make a major thrust in the direction of corporate donations. Finally, community colleges should engage in a study of the feasibility of some form of local funding for our institutions. Given the essentially local focus of our program efforts, this may prove to be an effective alternative to offset some of the financial burden at the state level. While some increased tuition is likely to be necessary, it is important that we maintian our commitment to low-cost quality education.

Governance

Since the mid-1960s, there has been discussion within the state concerning the advisability of the community college functioning within the structure of the University of Nevada System governed by the Board of Regents. Although efficient and practical, the current arrangement is viewed by some as having created a "stepchild" which, although the fastest-growing segment within the system, cannot *adequately* make its needs known within the state.[9] The period of "childhood" may be over and a fresh look at the structure of our community colleges may be needed. There are several state models which may be studied in the event that Nevada would wish to consider some alternative to its present governance structure for institutions.

A popular model of governance and funding for community colleges is that of a local governing board whose members are appointed or elected from the district in which the college resides. These boards are accountable to the community for fiscal, integrity, program development, and institutional growth. Funds are available from property tax or sales tax, which usually constitute anywhere from 20 percent to 50 percent of a college budget.

A second model employed by a number of states retains a local board of control and also provides for a State Community College Board. This board provides an essential coordinating function, oversees long-range state planning, and assists in the determination of state dollars to be made available to community colleges. In states where such boards do not exist, community college requests for state funds and their accountability for those funds is handled by either through the State Board of Education or a state governing board for universities such as a Board of Regents. Some states provide for local advisory boards as well as a state board for community colleges with all revenue deriving from the state.

The Nevada plan is similar to that of Alaska. Colorado functions with a state community college board/local advisory board model with no local funding. With the elimination of the community college division in Nevada, the time is appropriate to review the governance structure for our community colleges to see if that structure meets the needs of the community and the state. One might consider the creation of two sub-boards within the framework of the Board of Regents: one board would serve the university, the other board would serve the community colleges. The Board of Regents would remain as the single governing board for all educational higher institutions within the state. We might consider the creation of a State Community College Board answerable to the legislature. However, this could create expense and produce some confusion within the state organizational structure. Finally, we might consider the creation of local boards with appropriate authority to oversee the fiscal and program development of our institutions; such local boards may be appointed or elected. While this alternative might provide our institutions with much-needed local direction and influence, it raises serious questions about appropriate financing of our community colleges.

Clark County Community College and Southern Nevada: The Future

CCCC serves the most populous district in the state and includes Clark, Nye, Lincoln, and Esmeralda Counties in its service area. Approximately 400,000 of the 450,000 people in this service area live in Clark County and are concentrated in the cities of Las Vegas, North Las Vegas, Henderson, and Boulder City. The college currently operates from a single main campus with approximately seventy additional locations. Henderson is the major satellite operation with approximately 1,562 (HC) students enrolled during 1979-80.

In attempting to assess needs in the 1980s, the college conducted an Institutional Needs Assessment during Fall, 1979. 114,000 individual residences were contacted in Clark County during this time period. The major results of this study were:

1) that more locations for course offerings are

needed. 54.5 percent of respondents preferred a location closer to home.

2) that more variation in times of offerings be available. For example, 68.5 percent of respondents prefer evening classes.

3) that more courses of study be available. 17.1 percent-28 percent of respondents showed interest in study in Operating Your Own Business, Interior Decorating, Carpentry, Small Appliance/Engine Repair, Landscape Technology, Home Management, and Health and Recreation.

4) that more convenience be provided in programs and services. 43.5 percent of respondents were interested in mail registration.

5) that more emphasis be placed on community education (as distinct from traditional degree programs). 73.6 percent of respondents prefer taking classes to pursue their own interests; 62.0 percent would prefer more short courses.

If there is a single theme deriving from the results of this survey, it is access. The community wants an institution with maximum flexibility to meet its purpose, time, location, and special service needs. Based upon this survey, as well as national trends in community college education, the changing job market, and lifestyle shifts in southern Nevada, we may look to a future significantly altered as compared with the institution which opened its doors in 1971. Clark County Community College in the 1980s will be based upon an educational master plan calling for:

1) an increased commitment to *community-based operation* to meet the location needs of our clientele. The first phase of a Henderson Campus will open in Fall, 1981. There has been discussion concerning a campus on West Charleston. Outreach centers are being increased in number and scope of offerings.

2) a shift to a *community education model* for delivery of educational programs and services. While retaining traditional courses and degree programs, CCCC will respond to the new program and time demands of the community by emphasizing a variety of time frames for courses, variable ways of earning credit, certificate recognition for training (as distinct from credit), short courses, on-site instruction, and "mini programs" of several courses specifically tailored to meet student needs.

3) emphasis on *consortia and cooperation*. The community college will work with business, industry, and other educational agencies to provide educational opportunity to all persons within the community. We can "broker" educational services, provide training on a contract basis, and assist business and industry in retraining, upgrading, and improving skills of employees.

4) increased reliance on *communication technology* reflected in telecourses for credit, video tie-in with other educational institutions, and reliance on computer technology.

5) increased emphasis on *articulation with public education and the university* by means of efforts such as our "Early Studies Program" with the Clark County School District and the development of our first transfer guide with the University of Nevada, Las Vegas.

The college is likely to continue its trend of significant growth in occupational programs. This will need to be augmented by maintenance of academic standards, a commitment to integration of appropriate humanities education in career programs, and the strengthening of developmental programs within the institution. A strong staff development program will be needed in order that faculty can effectively undertake new program development, initiate new instructional methodology, and make changes in the structure whereby our programs and services are available. Management training, a strong data base, and long-range planning will be essential to success in the next decade. Much depends upon the stability of funds, possible changes in governance structure, and the state's commitment to its community colleges as a critical, viable source of educational opportunity for all citizens.

There is a strong need to stabilize utilization of part-time staff and to address the issue of professional salaries in the context of present inflation. If we fail to respond to faculty needs and reasonable requests, the state may be faced with a movement toward collective bargaining which may not be in the best interests of our higher education efforts for the students of the state. This concern will provide a major challenge to system officials and state government alike. The current economic recession, uncertainty about the state budget surplus, and growing personnel and agency needs within the state mandate creative solutions. Quality education is ultimately dependent upon quality staff. This requires a healthy collegial environment, adequate remuneration to offset anxiety interfering with work, and a strong enough salary base to attract vital and creative professionals.

Finally, the future will be exciting. Our colleges are at a critical stage of growth and change.[10] The 1980s will see a major refocusing of energy and effort. We have gone beyond the point of virtually automatic enrollment growth; we have significant clientele changes to anticipate; heretofore unprecedented demands will be made upon our facilities and staff. Nevada has much to prize in its community colleges. They are strong, effective, dedicated community education agencies. Citizens, legislators, and state executives can point with pride to the opportunity for quality education available to so many people.

Footnotes

[1] John A. Caserta, *A History of the Community College Movement in Nevada*, unpublished doctoral dissertation, 1979.

[2] University of Nevada System, Chancellor's Office, Credit enrollment only.

[3] Data supplied by American Association of Community and Junior Colleges. *Fact Sheet on Two-Year Colleges*, March, 1980.

[4] U.S. News and World Report, *Challenges of the '80's*. Special section, October 15, 1979, pp. 45-80.

[5] One undated planning document from the early 1970s for Clark County Community College prepared by the firm of Daniel, Mann, Johnson and Mendenhall states: "The division of the comprehensive community college is basically five-fold: occupational, university parallel, community services, developmental, and counseling and guidance. The scope of these areas is as broad as necessary to accomplish the educational goals of the communities served." (p. 4). "Enrollment goals of 60 percent occupational, 20 percent university parallel, 10 percent community service, and 10 percent developmental education are identified" (p. 5). These goals are sometimes considered to be enrollment requirements.

[6] Edmund J. Gleazer. *The Community College: Values, Vision, & Vitality*, Washington, D.C.: AACJC, 1980, p. 7.

[7] The University of Nevada System *Code* was revised in December, 1979 eliminating the Community College Division and establishing each of the four community colleges within the state as autonomous institutions.

[8] Edmund J. Gleazer, Jr. *The Community College: Values, Vision, & Vitality*, p. 20.

[9] As of Fall, 1979, CCCC has provided credit instruction to a cumulative total of 72,812 registrants in our eight-year history.

[10] Carnegie Council on Policy Studies in Higher Education. *Three Thousand Futures: The Next Twenty Years*, San Francisco: Jossey-Bass, 1980.

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The Comprehensive Community College

by James Eardley

Community colleges originally were started in this country in the early part of this century as junior colleges offering the first two years of a four-year college program. They served in this role until the end of World War II. In the 1950s and 1960s they expanded to become more comprehensive and offer a wide range of courses for credit. Particular emphasis in the '50s was on vocational education, and in the '60s upon developmental education with a strong emphasis on student personnel services. It was in the 1970s that community colleges began to broaden their concept to include a large community service program.

The Carnegie Report

Fortunately, when we started community colleges in Nevada in 1970, this concept was incorporated. It was in 1970 that the Carnegie Report on open-door colleges was published; it consisted of several major themes.[1] I will summarize them briefly here to show how consistently the community colleges in Nevada follow these themes:

1. The community college has proved its worth to American society. Community colleges should be available within convenient distance to all persons throughout their lives except in sparsely populated areas which should be served by residential colleges. Ideally, more than 95 percent of all Americans should be within commuting distance of the community college.

2. The Carnegie Commission favored a comprehensive community college with academic, occupational, and general education programs as against more specialized two-year colleges.

3. Community colleges should remain two-year institutions and not expect to become four-year graduate institutions. They have an important role to play and should not abandon it.

4. Full transfer rights should be provided qualified graduates of community colleges by comprehensive state colleges and universities.

5. Occupational programs should be given the fullest support and status within community colleges. These programs need to be flexibly geared to the changing requirements of society.

6. The Carnegie Commission supports open access to the community college for all high school graduates and otherwise qualified individuals. The community colleges have a particular role to play in assuring equality of opportunity to all Americans. The commission, while supporting open access, does not believe that all young people either want higher education or can benefit from it. Many of those who can benefit from higher education and want it would be better off in other endeavors for a time after high school before entering higher education. For this latter group, the community college can stand as a continuing open opportunity over a period of years.

7. The community college should charge no tuition or low tuition.

8. Guidance, both occupational and personal, is a particularly important function for the community college which serves so many students who are in the process of choosing their lifetime occupations and their lifestyles. It is an excellent place for those who are uncertain about their careers to canvass the opportunities and make their choices.

9. The community college has a special responsibility to enrich the cultural life of its neighborhood and to be an active center for art, music, and drama.

10. The Carnegie Commission believes that the ideal size of a community college is 2,000 to 5,000 students.

11. The community college, by the nature of its purposes, should relate to its local community, be governed by a local board, or at least have a local advisory board.

12. Financing should be increased and equitably served by federal, state and local governments. In particular, the federal government should provide start-up grants for the additional community colleges needed to provide nation-wide coverage.

Our community colleges in Nevada support most of these themes, which is why we have been successful.

The Mission of Community Colleges

The mission of our comprehensive community colleges is basically four-fold. It is the major purpose of the colleges to provide vocational or occupational education. But community colleges also provide university parallel, developmental and community service programs. There must, then, be a strong emphasis upon counseling and guidance if the open-door philosophy and these four broad types of programs are going to be able to succeed in the community.

More specifically, the occupational programs are those designed to provide the student with vocational or technical skills so that he or she may enter the labor force upon completion of the program. These programs are designed primarily to educate students for semi-skilled jobs, skilled jobs, and semi-professional technical jobs. It is not necessary for these programs to follow the normal collegiate semester or quarter pattern; many of these programs will only be four or six weeks in length. The intent is to provide the student with the skills so that he or she can enter a chosen occupation.

The rapid change in American society has come primarily from the tremendous advances in new and varied technologies. Many people in today's labor market owe their employment opportunities to occupational opportunities that did not exist a few years ago. Occupational programs in the comprehensive community college provide the basic employment skills and knowledge for students seeking entry into various employment fields. It is the intent to have the programs designed in such a way that faculty are in constant contact with the needs of each industrial area that is being served. The skill requirements for job entry must always be known by the college. That is why community colleges are serving all of these areas primarily through advisory committees, formed from people representing the various occupational programs within the community. The college relies heavily upon the experience of people within these particular occupations. It is necessary, then, to update these programs constantly in order to make them more effective. The occupational programs not only provide theory but also practical laboratory experience for the students.

The goal of the community colleges in the state of Nevada is to have 60 percent of the students enrolled in our community colleges in these occupational programs. So far we have been able to exceed this as a total division within the state.

A second major role of the community colleges is to provide university parallel courses and programs designed to enable students to transfer to four-year colleges and universities. This is the liberal education role of the community college. The courses, therefore, are designed to be taught at the same level as those taught at the more traditional senior institutions. Completion of the two-year program in the liberal arts area leads to an associate degree of arts, a degree that should be acceptable at all four-year colleges and universities.

Many students need this kind of an education in a community college. There are some students who cannot afford to go to universities or four-year colleges, especially when one considers the cost of tuition and leaving home. There are also many adults in the community who for various reasons cannot qualify for the universities; since the community colleges provide open-door education this gives many of them another opportunity. There are many students who have not done very well in high school and cannot meet the qualifications for entering a four-year college or university; these students can get a second chance in a community college. There are some students, particularly older students, who are fearful of entering the four-year colleges and universities but through a strong program of counseling and guidance can enter a community college and perhaps succeed eventually in going to a four-year college or university and getting a baccalaureate degree. There are also some students who simply prefer a community college atmosphere. It is for these reasons that the community college engages in liberal arts education.

Another reason for offering liberal arts and science courses in the community college is to provide this type of education for those students enrolled in occupational programs. It is our philosophy that a student in the occupational programs in the community college must not only know how to make a living, but must also know *how* to live. We require for our Associate in Applied Science degrees that one-third of the courses be in the liberal arts area. Placing the occupational students and the liberal arts students who wish to transfer to four-year programs in the same classes fuses the community college together as one institution. If one did not have these kinds of courses, then the community college would cease to become a college and be only a technical institute. This is the primary reason that across the country many of the technical institutes have been phased into community colleges and have become much more successful in attracting students and in meeting the needs and preferences of the community. Also, placing all the students in the same classes represents a savings of educational dollars. It was a hard struggle in many states to convince people that occupational students and university parallel students could compete in the same classes. Experience has shown us that they can do so and very well.

A third major kind of program in the community college is termed the "community service function." This has also been labeled continuing education, community service education, or adult education. It is here that the faculty and staff should identify with the community and try to ascertain its needs. Workshops, short courses, seminars and conferences should be provided as well as adult education courses to enable adults to upgrade and update skills in their occupations, or learn new skills to enter different occupations. One of the most important of these functions is to provide individuals and groups in the community with opportunities to learn recreational skills and to participate in recreational programs.

A fourth function for the community colleges is that of developmental education. Formerly these programs were called remedial programs, but the term remedial had such a negative connotation that few students wished to enter the program. There are many students, however, particularly in the fields of mathematics and English, who wish to develop their skills to the point where they can pursue the other kinds of courses. Each particular program in the comprehensive community college maintains an entry level that reflects the goals of employment skill development. Not all people who register for classes will be qualified to enter these programs. Those persons who possess ability, but do not have the necessary background preparation will be given an opportunity to build their educational deficiencies to the required levels. In so doing, the community college wishes to employ less traditional methods to remedial education than have been developed in the past. It is our intention to provide individualized instruction so that the student can move as fast as possible in order to pursue his or her goals. Upon completion of those particular aspects of the program, if the student and faculty feel that he or she is qualified to enter the other program, then he or she may do so.

In order for these four broad types of programs to succeed, the community college must have a strong counseling and guidance function. Trained professional counselors must work with each student in order to assist in achieving desired educational goals. The staff should form a testing program which will assist each student in measuring individual potential. Interview sessions, then, are designed to assist the student to better understand his or her potential. Counselors also assist in developing the role of the faculty advisor in helping students to achieve proper course and program planning. It is the function of the counselors to make presentations within the community to tell high school students the kinds of programs that are available, as well.

Occupational programs in our community colleges have been divided into five broad categories. These are: agriculture, business, health, industrial, and public service. In the agricultural cluster, programs have been developed in agricultural mechanics, agricultural management, farm and ranch management. The business programs are probably the largest group within the community colleges. We have developed programs in areas such as bookkeeping, all types of secretarial skills, insurance, data processing, retailing, office administration, business management, real estate, etc. In the health occupations group are the practical nursing program, the registered nursing program, medical technicians, nurses aides, radiologic technicians, surgical technicians, dental assistants, dental hygienists, mental health technicians, inhalation therapy, etc. In industrial programs, we have electronics, mechanical design, air transportation, appliance repair, automotive repair, refrigeration, all types of building trades, apprenticeship programs, radio and television repair, slot machine repair, and heavy equipment repair. In the public service area there are programs such as law enforcement, fire science, cosmetology, culinary arts, food management, teacher aides, as well as others.

It is our hope that we can eventually develop two or more levels of programs in most of these occupational fields in order to better serve the adult population. We also hope to provide a job cluster, a job category approach to curriculum organization. The graduates then are field-oriented rather than job-oriented and will have greater occupational mobility and a lower rate of unemployment caused by technological change. A course curriculum approach has been used in planning associate degrees and curriculum within the colleges. We have continuous contact within the state with the various active advisory curricular committees as we develop our programs.

Our community colleges seek to have quality programs. We desire to have diversified programs and to maintain flexibility. Many times in the discussion of vocational liberal education it is felt that only liberal arts educators can provide quality education. We strongly support John Gardner's commitment to excellence in higher education. He has stated:

> As things now stand, the word excellence is all too often reserved for the dozen institutions which stand at the very zenith of our higher education in terms of faculty distinction, selectivity of students, and difficulty of curriculum. In these terms it is simply impossible to speak of a community college, for example, as excellent. Yet sensible men can easily conceive of excellence in the community college . . .
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> We shall have to be more flexible than that in our conception of excellence. We must develop a point of view that permits each kind of institution to achieve excellence in terms of its own objectives . . .
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> We must recognize that there may be excellence or shoddiness in every line of human endeavor. We must learn to honor excellence, indeed to demand it, in every socially accepted human activity, however humble the activity and to scorn shoddiness, however exalted the activity. There may be excellent plumbers and incompetent plumbers, excellent philosophers and incompetent philsophers. An excellent plumber is infinitely more admirable than an incompetent philosopher. Society which scorns excellence in plumbing because plumbing is a humble activity and tolerates shoddiness in philosophy because it is an exalted activity will have neither good plumbing nor good philosophy. Neither its pipes nor its theories will hold water.[2]

Community Service Programs

Nowhere in our comprehensive community college are flexibility and diversity needed more than in our community service programs. Our objectives in those programs are to assist in the solution of community problems by making staff resources and physical facilities available to the community; to assist individuals to assume responsibility for their own continuing education; to provide programs of instruction beyond the classroom and laboratory, seminars, workshops, and conferences; to assist all adults in the community to upgrade and update their skills in a variety of vocational technical programs; to assist in raising the cultural level of the community by offering opportunities for participation in programs of a cultural nature; to provide individuals and groups in the community with opportunities to learn recreational skills; and to participate in recreational programs and to enhance the public community to the college in a service area by attempting to serve the educational, cultural and recreational needs of the community. These programs must be made a vital part of our total comprehensive community college. Each one of the programs, courses, and workshops that are developed for continuing educational programs should be totally incorporated with the other programs of the colleges. We must continue to give community college credit for any program that we offer. If it is worthy of being offered, it is worthy of being given credit. We must also not restrict these kinds of programs to adults in the evening programs. The same kind of program must be offered throughout our total fourteen hour day with no differentiation between day and evening classes. All of the services of the college must be made available, including strong counseling and guidance service, for all students. If we are to continue to serve all segments of the community, including the poor and the disadvantaged, we must move even closer and deeper into the community. Our campus must be extended into all geographic areas of the community. Close cooperation with existing community agencies and the federal programs must be maintained and enhanced. It is in this manner that our colleges have been able to reach out into the community. We can never be all things to all people but we must work in harmony with all existing agencies in the community we serve.

Ed Gleazer, President of the American Association of Community and Junior Colleges, put it this way, "Community colleges now exist in a far more competitive environment than that of the sixties; developmental education, occupational education, and other services considered by the community colleges to be among their distinctive offerings are found in a growing number of institutions that have a new awareness of the educational market."[3] He warned that community colleges could suffer the fate of other growth industries that have failed to adapt to changing conditions in the market. If community colleges define their market too narrowly and seek only the kinds of students who came to us in the sixties, they may suffer reduction in size and importance. He has proposed that community colleges redefine their role to become community-based colleges offering not only college transfer courses and vocational-technical training, but also a wide range of community services, and educational experiences for virtually any and all groups that need them within the community.

Student Success

We have a number of policies and procedures which affect our ability to ensure that our students are successful in their educational endeavors. We hope to continue these policies such as an open-door admission, relatively low admission fees, a wide range of programs for students' individualized remedial programs, a no-failure grading system, alternate semesters and flexible scheduling, all with a high emphasis on guidance and counseling.

One of the problems that occurs periodically in terms of the role of a community college in regard to liberal education is how well community college graduates do when they transfer to four-year colleges. National studies show that community college graduates usually do as well at the four-year colleges as they have done at the community colleges. In general, their grades decline during the first semester but by graduation they are almost identical with those achieved at the community colleges. Studies show that community college students are successful after transferring to four-year colleges, even though, as a rule, the students are less academically able than their university counterparts. Two possible answers are given for this good showing: (1) Because of the distinctive nature of its mission and program the community college is able to upgrade and salvage students whose high school preparation was initially inadequate to pursue college work. This salvage function affords the student an opportunity to complete required courses not taken in high school to earn grade-point averages sufficiently high to demonstrate competence to do college work and to increase basic skills in the fundamental subjects. (2) The community college transfer programs serve as a filtering process through which the proficient student passes on the way to the four-year college program, but which prevents the unqualified from continuing. The filter hypothesis suggests that the community college graduates only those students who would have been successful had they attended a four-year college in the first place.

Career Education

We at TMCC subscribe to the concept of career education, by which we mean that all educational experiences, curriculum, instruction, and counseling should be geared to preparation for economic independence *and* appreciation for the meaning and dignity of work. The main thrust of career education as we practice it is not just narrow vocationalism, but the preparation of all students for a successful life of work by increasing their options for occupational choice, eliminating barriers, real and imagined, to attaining job skills, and by enhancing learning achievement in all subject areas and at all levels of education. Career education recognizes critical decision points at which students must be prepared and equipped to decide whether to pursue a job, take further education, or choose some combination of both. Career education prepares the individual for employment, and later in his or her career, upgrades skills and knowledge, and retrains for a new job. Career education, in the words of former U.S. Commissioner of Education Marland, would "eliminate the artificial separation between things academic or liberal and things vocational." He has observed that educators must be bent on preparing students either to become usefully employed immediately upon graduation from high school, or to go on to further formal education. The student should be equipped occupationally, academically, and emotionally to spin off from the system at any point, whether at age 16 as a craftsman apprentice, or age 30 as a surgeon, or age 60 as a newly-trained practical nurse.

One of the goals towards which this education system must direct itself is provision for every student to acquire the skills which will allow him to make a livelihood no matter what level of educational system he or she leaves. Such skills allow a person to use his or her capabilities and activities which contribute both to individual fulfillment and society's maintenance and progress. Career education not only provides job information and skill development but also can help students to understand the significance of work through studying more academic subjects. Extensive counseling and guidance activities assist the student in developing self-awareness and in matching interests and abilities with potential careers. Finally, placement into an entry-level job or further education is virtually guaranteed for every student if they are in an effective career education program.

Leonard Woodcock, President of the United Auto Workers, spoke in 1977 in Seattle to the American Association of Community and Junior Colleges about the role of community colleges in our present society and made some useful comments about the limitations of career education.

> We in the UAW believe that workers have many needs and require a range of opportunities, many of which the community colleges can and should satisfy. We are convinced that it will be a scandal and perhaps a calamity if the community colleges and American labor movement fail to enter into a broad, cooperative partnership to provide American workers a relevant education not only for the world of work but to deliver as well the knowledge and insight essential in broadening life's horizons and in improving the quality of citizenship. We believe that there is a common core of interest between the unions and the community colleges — labor likes your open admissions policy — we certainly favor low tuition. The geographical accessibility of your colleges is an obvious asset.
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> Certainly we both recognize the social value of an educated citizenry and the worth of the individual. We both favor equality of opportunity and social and economic mobility. From our own experience, we know you have a very flexible curriculum — an obvious essential for lifelong learning in a rapidly changing society and economy and training for new careers. We must beware of falling into the career education trap — we cannot afford the luxury of training our youth for already obsolete jobs in an economy where skills become rapidly outmoded. Career options moreover are very bad bets in a society shot through with unemployment. We must go back to the general intelligence that Horace Mann said was the life and heart of a free society.[4]

We agree with Woodcock's view. Community colleges can teach leadership skills to people in the community and offer tools for participation in community life. They can give to all groups understanding of how our economy functions (or fails to function) and sharpen the citizen's insight into the values or strengths and weaknesses of the country in which we live. This is where our concept of liberal education being an invaluable part of career education comes in so strongly.

Dr. Marland suggests that some people are not necessarily impressed with economic advantages implicit in work. Those young people who march to a drum beat different from the economic rhythm of their fathers often possess a deep commitment to the service of their fellow man. They, too, are the concern of career education for the essential message of this program — the useful and fulfilling life. They will be better able to serve their fellow man if qualified as skilled artisans, health technicians, social work aides, environmental technicians, to mention a few fields of usefulness and fulfillment. The essential need is that every student be equipped to live as a fulfilled human being. Robert Frost has expressed it well in his poem, *Two Tramps in Mudtime:* "But yield who will to their separation; my object in living is to unite my avocation and my vocation as my two eyes make one in sight; only where love and need are one and the workers play for mortal stakes is a deed every really done for heaven and the future's sake."

Footnotes

[1] Carnegie Commission on Higher Education, *The Open-Door Colleges*, New York: McGraw-Hill, 1970.
[2] From a memo from Dr. Charles Donnelly, 1977.
[3] Edmund J. Gleazer, Jr., *Values, Vision, and Vitality*, Am. Assoc. of Community and Junior Colleges, Washington, D.C., 1980.
[4] From a memo from Dr. Charles Donnelly, 1977.

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WICHE and Professional Education in Nevada

by Don W. Driggs

What is WICHE? It is doubtful that many Nevadans could state the words for which the acronym stands, let alone explain what this vital organization actually does. It is hoped that the following explanation of the purpose, methods of operation, and problems of the Western Interstate Commission for Higher Education (WICHE), both as a compact of states and as an entity in Nevada, contribute to dialogue on the future of professional education in the state.

Historical Background

The suggestion of cooperation among western states in providing professional education in the health services fields was first advocated in public by Dr. Florence Sabin in a speech in Salt Lake City in the early 1940s.[1] The first interstate compact for education did not take place in the West, however, for in 1948 the Southern Governors' Conference initiated the agreement which led to the establishment of the Southern Regional Education Board. The following year the members of the Western Governors' Conference, after hearing a report about the SREB approach and led by Governor Earl Warren of California, unanimously adopted a resolution endorsing a cooperative regional approach toward meeting the needs of students in the various states for "technical, professional, and graduate training."[2] A compact was developed during the ensuing year and received the approval of the western governors at their meeting in Denver in November 1950. The first section of the Western Regional Education Compact incorporated the first three paragraphs of the resolution passed by the governors in 1949 and spelled out the principal reasons for the formation of the compact. This preamble stated that "many of the western states individually" lacked both "sufficient numbers of potential students" and the "financial ability" to establish high-standard "technical, professional, and graduate training" in all of the essential fields.[3] Therefore, the states agreed to work "cooperatively" to provide "acceptable and efficient educational facilities to meet the needs of the Region and of the students thereof."[4]

The formal establishment of the regional organization took place in 1951 after the necessary five states had ratified the compact. However, the student contract program (later to be known as the student exchange program) did not effectively begin until September, 1953. During that year, forty-one students were involved in the exchange program in three fields — medicine, dentistry, and veterinary medicine.[5] The legislatures of the sending states appropriated the funds "to defray educational costs beyond the in-state tuition payments" for qualified students to attend professional schools in these three fields in other western states.[6] By the end of 1955, only two of the states and territories listed in the original compact had not joined — Nevada and Hawaii. After strong urging by Dr. Fred M. Anderson, a well-known surgeon and member of the Board of Regents of the University of Nevada, the Nevada Legislature approved the compact in 1959. The Territory of Hawaii formally joined WICHE three weeks after Nevada, thus completing the present membership of thirteen states.

The Medical School Issue in Nevada

Dr. Anderson's enthusiasm for Nevada's involvement with WICHE was primarily motivated by his twin concerns that qualified Nevada students have the opportunity to attend medical school and that the fast-growing state be able to meet the demands for physicians. The state's first three WICHE exchange students began their professional educations in the fall of 1960 at the University of Oregon and University of Utah medical schools and the Washington State University School of Veterinary Medicine.

Although serving as a WICHE commissioner, Dr. Anderson had doubts about enough Nevadans being admitted to WICHE-cooperating medical schools to satisfy the state's needs. At a meeting of the Board of Regents on June 1, 1962, he reported on discussions among the western states without medical schools for a regional school to serve their respective needs. Dr. Anderson stated that Nevada had a good chance of being selected as a site for such a multi-state school.[7] When it appeared that the regional medical school was not going to become a reality, Anderson broached the possibility of Nevada establishing its own two-year school at a regents' meeting in April 1964, citing considerable support by local physicians for such a program.[8] He was also able to point to the "Faulkner Report," a WICHE-sponsored study of opportunity for medical education in the four "have-not" states of Idaho, Montana, Nevada, and Wyoming. The study concluded that the four states faced the prospect of a shortage of physicians. However, Dr. James M. Faulkner, the report's author, felt that inasmuch as these states could not feasibly establish either two- or four-year medical schools in the foreseeable future, they should expand their use of the WICHE student exchange programs to provide more opportunities for their medical students.[9]

The Anderson proposal for a study of the feasibility of setting up a two-year school had been considered briefly during the 1961 session of the Nevada Legislature. An assembly resolution directing the Legislative Counsel Bureau to proceed with such a study had three co-sponsors, including Maude Frazier, the chairman of the Assembly Education Committee; however, the resolution died in committee and was not resurrected until six years later.[10]

On February 11, 1967, a decision by the Board of Regents to match a $300,000 grant from the Board of Trustees of the Washoe Medical Center and fund a two-year medical school study set off a controversy in the legislature. The two houses of the legislature eventually endorsed the aciton of the regents, but only after Howard Hughes pledged to support the operating budget for the school for up to $300,000 a year for twenty years. Even with the pledge from Hughes, the Clark County delegation in the senate was strongly opposed to the action, with all eight senators casting their votes against the resolution.[11] It is interesting in the light of future developments that in the letter to Governor Paul Laxalt the wealthy eccentric states that he would write the pledged amount into his will.[12] (It subsequently came to light that Hughes had thought the medical school would open with a four-year program; the pledged amount was then negotiated downward to $200,000 a year.)

The north-south split that was evident in the 1967 vote on the feasibility study was still present in 1969. After receiving the study which was done by Dr. George Smith (later to become the first dean of the medical school) and Dean Robert C. Weems of the UNR College of Business, the legislature passed a bill authorizing establishment of the two-year Health Sciences Program. Majority Leader Mahlon Brown from Clark County led the fight against the medical school in the upper house and proposed that additional students be supported through the Western Interstate Commission for Higher Education as an alternative.[13] Brown also suggested that the state contract with the University of Utah and other medical schools for positions for Nevada's medical students rather than proceed with the more expensive approach of establishing a two-year program. Despite the unanimous opposition of the Clark County assemblymen and senators, the two-year health sciences program was endorsed by the assembly and senate by votes of 21-18 and 12-8, respectively.[14]

With the establishment of the two-year program, Nevada became both a sending and receiving state in medicine through the WICHE student exchange program. A small number of WICHE students from western states without medical schools were accepted into Nevada's program, whereas a much larger group of graduates of the two-year school had to be placed in other schools for their third and fourth years. The WICHE-cooperating medical schools in the West were not able to absorb all of the graduates of the Nevada program, so the Nevada WICHE commissioners obtained authorization from the 1975 legislature to contract with medical schools outside the WICHE area for placement. The resulting bilateral contracts with the University of Alabama and Tufts medical schools enabled the University of Nevada to place all the graduates of its two-year school.

As many of the University of Nevada faculty had anticipated at the time the two-year school was established,[15] the medical school, which was proving to be much more expensive than originally expected, was expanded to a full four-year program in 1977, just five years after the first students had been admitted to the two-year program. One major fact cited by the UNR School of Medical Sciences in its proposal to develop a four-year program was the decision of the WICHE commissioners to double the support fee for medical students. Thus, the costs to send thirty junior and thirty senior medical students through the WICHE program would rise to $720,000 annually, a sum which the legislature decided could benefit the state more if spent at an in-state school.[16] Also, problems in placing third-year students in four-year schools had developed, and a federal program to assist two-year schools in converting to four-year programs was due to expire at the end of 1977.

In contrast to the divisive nature of the medical school question during the 1967 and 1969 sessions, the administration and faculty laid the groundwork superbly so that the resolution to expand the school to four years was assured of overwhelming support well in advance of the opening of the 1977 legislative session. Governor O'Callaghan gave the conversion his wholehearted support and the resolution had thirty-six (out of a possible forty) co-sponsors in the assembly. The resolution was passed by an unrecorded voice vote in the lower house and by a 15-5 vote in the senate.[17]

With the establishment of a degree-granting medical school in Nevada, the main purpose for the state becoming affiliated with WICHE was no longer relevant. In the meantime, however, WICHE had expanded its student exchange programs and Nevada had opted to participate in several of them.

The WICHE Student Exchange Program

During the first ten years of its operation, the WICHE student exchange program was confined to the three original fields of medicine, dentistry, and veterinary medicine. In 1963 the commissioners voted to include dental hygiene. Physical and occupational therapy and optometry were added in the late 1960s, as were podiatry, forestry, graduate library studies, law, pharmacy, graduate nursing, public health, and architecture in the 1970s. At the semi-annual meeting of the WICHE commissioners in June 1980, for the first time a program of a single institution — the California Maritime Academy — was added as a student exchange field.

In the 1960s, WICHE policy was that a professional field included in the student exchange program, should be characterized by one or more of the following:

"1. The field requires expensive or prolonged training.
2. Facilities for training are scarce.
3. The home state is not able to provide the training.
4. There are personnel shortages in the field."[18]

More recently, the policy has been that the WICHE Commission "will consider endorsement of an additional field for inclusion in the Student Exchange Program when staff reports formal expression of interest in such an addition from at least one Compact state and the willingness of at least one accredited program to enroll fully qualified WICHE students."[19]

The WICHE Commission, which is composed of three commissioners from each of the thirteen member states, has the responsibility of setting a common fee for each of the student exchange fields. States electing to participate in a field pay this support fee for each of its WICHE-certified students who are enrolled in a cooperating school. Students are responsible for paying resident tuition at public schools and *may* be asked to pay an amount equal to one-third of the standard tuition when enrolled in a cooperating private school.[20] The WICHE support fees, which are reviewed every two years, are based on a weighted average of the cost of education at the various participating schools in a field; however, the commission can vary from the weighted-average concept in cases where immediate implementation of the full cost of education in a field would endanger support of the "sending" states. Because most states do not charge non-resident students the full cost of their education, the WICHE fees are often higher than the out-of-state tutition. The "receiving" states and schools feel that they should not subsidize the "sending" states inasmuch as helping the latter to avoid establishing an expensive program is already a substantial benefit.

Alaska is the only state that presently sends students in all the authorized WICHE fields. Nevada is a sending state in dentistry, veterinary medicine, physical therapy, law, and optometry. As mentioned above, Nevada is now a receiving state in medicine and discontinued sending students in dental hygiene when the Clark County Community College established a program. Normally, the three Nevada WICHE commissioners, who are appointed to four-year overlapping terms by the governor, recommend the possible addition of new support fields to the governor and legislature. However, in 1975 the Nevada Legislature added law as a field without such a recommendation from the commissioners in order to forestall the drive for the establishment of a school of law. The number of students to be partially supported in each field is recommended by the commissioners in the biennial budget request, with the governor and the legislature sometimes adjusting the figures up or down.

The Nevada WICHE budget was normally handled routinely by the state budget office and the legislature prior to 1976, when the WICHE Commission drastically increased the support fees for medicine, dentistry, and veterinary medicine. The commission acted after California, which is only a "receiving" state, had threatened to withdraw from the compact because the fees fell so short of meeting actual educational costs. Many of the public and private professional schools had also protested the low support fees. Governor O'Callaghan stated flatly that he would not support state payment of the support fee for medicine, which had jumped from $6,000 to $12,000. The governor first proposed that students pay the increase in the fee. Thus, the medical student would have had to pay the $6,000 increase, in addition to the in-state resident fees. On the other hand, law students would have fared much better under the O'Callaghan plan, as the support fee for law had been increased only a modest $100. Given the fact that the state's chief executive would not go along with full state payment of the support fee, the three Nevada commissioners (Dr. Fred M. Anderson, Dr. Patricia A. Geuder, an English professor at UNLV, and Dr. Thomas T. Tucker, chairman of the Department of Educational Administration at UNR) countered with a recommendation that the student pay one-fourth of the entire support fee. Under this plan, the medical student would pay $3,000 of the support fee in 1977, while the law student would pay $625. Governor O'Callaghan agreed to go along with this proposal.

During the 1977 legislative session, there was some consideration of reducing the number of students who would receive certification in each field instead of requiring the students to pay a portion of the support fee. However, dental students who had already been admitted and certified for the 1977 entering class effectively lobbied not to reduce the number of certified students. Indeed, the legislative committees increased the number of new dental students to be partially supported from the twelve recommended by the commissioners to fifteen. The problem was complicated by the fact that in certain areas such as dentistry, veterinary medicine, and optometry, a Nevada student found it almost impossible to gain admission to a western school without WICHE certification since such certification carried with it the cost-of-education support fee.

At the hearing on the 1977-79 WICHE budget before the Senate Finance Committee, a large number of medical and dental students complained about the financial problems they would encounter if they were forced to pay one-fourth of the support fee. In response to their pleas, a loan fund was established so that WICHE certified students could borrow the money to pay their share of the fee; the loans in turn could be repaid by the students after they graduated from professional school and completed their residency requirements.

Other members of the WICHE Commission were very upset when they heard of the Nevada action requiring the students to pay a portion of the support fee. Several commissioners expressed the view at the 1977 and 1978 meetings that Nevada was departing from the original concept that the state-paid "cost of education" support fee would enable the student to be obligated to pay only the in-state resident fees. Nevada students who were already in WICHE programs were upset also, and some expressed dismay that the state had changed the rules in the middle of their programs. Dean George Smith of the University of Nevada School of Medical Sciences proceeded to do something about his anger and was able to convince most of the cooperating medical schools to allow the Nevada students to withdraw from the WICHE program and still be considered as residents for fee purposes.

The 1977 Nevada Legislature also added a "pay-back" provision to the Nevada WICHE statutes, which required WICHE students who fail to return to the state to practice their professions for three years to pay back the amount of the stipends paid by the state. Such a provision had been part of the supporting statutes passed by the Nevada Legislature in 1959 when it approved Nevada membership in the WICHE Compact. However, the opinion of the attorney general's office in the 1960s was that such a provision was unenforceable, and the so-called "indenture" section was repealed by the legislature. In 1977, two of the legislators who had been strong backers of the original pay-back provision in 1959 — James Gibson and Floyd Lamb — were in key positions as Senate Majority Leader and Chairman of the Senate Finance Committee, respectively. The two lawmakers were able to obtain the support of their colleagues to restore the pay-back requirement, much to the consternation of the Nevada WICHE commissioners and students. The WICHE certifying officer at the time, MaryJo Antunovich, was able to convince the legislators that it would be unfair to apply the reimbursement provision retroactively. Thus only those students entering the WICHE programs in the fall of 1977 and afterwards are subject to the pay-back requirement.

Only two other states have laws requiring students who do not return to practice their professions to repay the state for the cost of their support fees. Idaho has not tried to enforce its law, but Arizona has had excellent success with its law requiring a fifty-percent pay back. Many of the WICHE commissioners believe that the courts will eventually declare such indenture provisions unconstitutional, since Arizona and Nevada do not require students attending expensive schools within the state to stay and practice in the state.

In 1978, the Nevada WICHE Commissioners decided to attempt to convince the budget office, the governor, and the legislature that the one-fourth student payment and the pay-back provision should be repealed. Senator Thomas "Spike" Wilson, a member of the Finance Committee, agreed to sponsor the necessary legislation. However, Budget Director Howard Barrett was under orders from Governor Robert List to cut agency requests "to the bone," and he actually recommended reducing the state support to fifty percent of the WICHE fee for the 1979-81 biennium. Thus, when the Nevada commissioners met with Governor List to appeal the preliminary executive budget figures in early January of 1979, they found themselves arguing against the fifty-percent study payment rather than the twenty-five-percent payment required in the 1977-79 biennium. The commissioners produced figures showing that in many cases Nevada WICHE students would be paying a higher amount than the out-of-state tuition if they were forced to pay fifty-percent of the support fee, which had been intended as a state payment only. Governor List decided to leave the state-student breakdown on payment of the support fee the same as in the previous biennium; he also refused to support any repeal of the pay-back provision.

Nevada WICHE commissioners took their fight to repeal the two provisions to the legislature. However, with the overwhelming support for tax-cutting Question 6 displayed by the electorate in November 1978, the members of the money committees were in no mood to increase state expenditures. After one of the commissioners explained to the Senate Finance Committee that Nevada was the only state that required students to pay a portion of the WICHE fee and that the commissioners from the other states took a dim view of the practice, one member of the committee shot back, "I don't give a damn what other states think."[21] Charts were also circulated to members of the money committees to demonstrate that it was unfair to require reimbursement from students who did not return to the state to practice. For instance, the total nonresident tuition at the Washington State University School of Veterinary Medicine in 1978-79 was $3,758. Nevada WICHE students were paying $3,591 (one-fourth of the WICHE support fee of $10,250 plus in-state fees), almost as much as the nonresident tuition, and were also incurring a possible total obligation for the year of $11,278 if they did not return to the state to practice. It was easy to see why many of the WICHE students from Nevada sought out ways to gain residency in the various states where they were attending school, even though they had agreed to remain a WICHE student when accepting certification. Despite the explanations and charts, the legislators left the WICHE program the same as during the previous biennium.

The prospects for returning to the pre-1977 budgetary approach to WICHE in Nevada appear dim. The governor has informed the WICHE commissioners that he will not support the twenty-five-percent increase in support fees that would be required if students were relieved of paying that amount. In the matter of the pay-back provision, the Nevada commissioners will try to get the reimbursement obligation changed to fifty percent, although they favor total removal.[22]

Certainly the present WICHE program is not as attractive for Nevada students going to professional schools as it was prior to 1977. If a Nevada resident is not sure about returning to the state to practice, going the WICHE route could be very costly in the long run because of the reimbursement obligation. Ill will is found to develop and the costs to the state to prosecute individuals who do not make repayments on the loans or reimbursement obligations will be substantial. What many people seem to overlook is that the WICHE programs actually save the state money, inasmuch as the state does not have to set up its own costly programs. On the other side of the issue, some key legislators question whether they have an obligation to provide such opportunities for their young people. Alaska has decided to pay the full WICHE support fee for any of their students who can gain admittance to WICHE cooperating professional schools in any of the fields. Nevada appears to be headed in a different direction at this time.

Functions of WICHE other than Student Exchange

As mentioned, the primary reason for the establishment of WICHE was the student exchange program. From the beginning, however, there was an understanding that the commission's activities would go beyond SEP.[23] The State of California might not have ratified the compact if only student exchange had been involved, for the region's largest-population state had all of the professional schools and would be basically a "receiving" state. The WICHE commission approved other functions to be performed from the early days of the organization. For instance, in 1955 the WICHE staff supervised a study of dental manpower in the western states, with the cost being underwritten by the W.K. Kellogg Foundation. During the same year, the Western Regional Conference of the Council of State Governments asked WICHE to survey mental health training and research in the western states. The latter project was underwritten by the National Institute of Mental Health and led to the establishment of a Western Council on Mental Health Training and Research as part of WICHE.[24]

The approval of mental health training and research as a permanent WICHE program opened the door for other programs. In ensuing years programs such as nursing education (1957), student internships (1968), planning and management systems (1968), and minority education (1969) were added.

By the late 1960s some WICHE commissioners became concerned that the expansion of these programs might have gone beyond the intent of the compact. A committee chaired by Commissioner Gordon Sandison, a Washington state senator, examined these programs as to their appropriateness to the compact and commission policies. The study concluded that existing programs were in accord with general policies and guidelines.[25]

With the expansion of the WICHE staff to administer the various programs, charges of "empire building" were leveled against the organization by governor's aides in some of the states in the mid-1970s. One criticism stated that the staff "would find where dollars could be secured and then develop programs to use the funds."[26] Dr. Robert H. Kroepsch, who served as Executive Director of WICHE from 1960 to 1976, was proud of the fact that WICHE received substantial grant funds from both federal and private sources and that the ratio of grant dollars to state dollars over the years had been about eight to one.[27] Kroepsch also was pleased that the WICHE staff had increased from 15 people to more than 200 during his tenure.

The WICHE division that came in for the most criticism from governors' staff people was the planning and management program that had expanded into a national organization, the National Center for Higher Education Management Systems (NCHEMS). The expansion beyond the western region made NCHEMS a prime target for criticism that it had exceeded the WICHE guidelines.

In the midst of charges of over-expansion, the WICHE Commission in 1976 approved a staff recommendation that the annual dues paid by each member state be increased from $28,000 to $39,000, beginning with the 1977-78 fiscal year. The dues increase led to a decision by the Western States Legislative Fiscal Officers to review services provided the states by WICHE. One of the recommendations resulting from the review was that "WICHE should consider disassociating" itself from NCHEMS.[28] The fiscal officers also recommended that the member states "seriously consider removing financial support from the mental health and human services program."[29] While strongly defending the mental health program, which is supported by voluntary state donations, the WICHE staff did recommend and the commission approved that NCHEMS become a separate organization, effective July 1, 1977.

The dues increase also touched off other examinations of WICHE programs, including one mandated by the California Legislature to study "the desirability of further participation in the programs sponsored by the Western Interstate Commission for Higher Education."[30] The resulting "Ratchford Report" spelled out the various benefits which the State of California received from its WICHE membership and recommended very strongly that the association be continued. This report and the resulting decision of California to remain in WICHE was crucial, inasmuch as a substantial number of the schools cooperating in the student exchange program are located in that state.

In the meantime, the 1976 Western Governors' Conference set up a three-person task force, including Bruce Arkell, Nevada's planning coordinator in the O'Callaghan administration, to examine multi-state educational organizations in the West. The task force decided to confine its investigation to WICHE and recommended against the dues increase "pending consideration of the findings and conclusions of the internal WICHE evaluation which is currently in progress."[31] The WICHE Commission had authorized the hiring of an outside educational consulting firm to perform the evaluation of the organization.

The three Nevada commissioners had provided for the increase in dues for each year of the biennum, in line with the decision of the full commission. The governor's budget, however, curiously called for the old dues ($28,000) during the first year and the new dues ($39,000) during the second. Arkell advised Governor O'Callaghan that he thought most of the governors would refuse to approve the dues increase, pending action at the 1977 Western Governors' Conference.

As it turned out, WICHE had enough support among governors and legislators that all of the states except Nevada went along with the dues increase. Nevada commissioners pleaded with the legislative money committees not to make them "second-class citizens" on the WICHE Commission, but to no avail. Thus, Nevada was the only state in arrears for the 1977-78 dues. Following the session and the decision of all the other states to increase dues, the Nevada commissioners asked Arkell to check into asking the Interim Finance Committee for the additional $11,000; however, Governor O'Callaghan was strongly opposed so the matter was dropped.

At meetings of the WICHE Commission in 1977 and 1978, there was discussion of the fact that Nevada was in arrears on the dues. However, Executive Director Phillip Sirotkin and the WICHE staff were opposed to any action which might make more difficult an already delicate situation in Nevada. At the 1978 annual meeting, Nevada commissioners announced that they would make a supplemental budget request for $11,000 at the 1979 session of the legislature. The special appropriation was endorsed by Budget Director Barrett and incoming Governor List and sailed through the legislature with no opposition. Thus Nevada was back in the good graces of WICHE.

Governor O'Callaghan played a prominent role at the Western Governors' Conference in 1976 and 1977 in questioning certain WICHE programs and the administrative cost involved. The separation of NCHEMS and a general reduction in personnel at the WICHE headquarters in Boulder, Colorado accomplished by Executive Driector Sirotkin did assuage some of the complaints of O'Callaghan and his aides. After receiving the report of the consultants on specific aspects of WICHE at the 1977 conference in Alaska, the governors set up a joint gubernatorial-legislative committee to study and make a recommendation on the scope and purpose of WICHE. Governor O'Callaghan asked to be on the joint committee and was so appointed.

The report of the gubernatorial-legislative committee was presented at meetings of the Western Governors' Conference and the executive committee of the Western Conference of the Council of State Governments in June, 1978.[32] The report basically upheld the propriety of the existing WICHE programs as being within the organization's scope and purpose. The committee also called for closer communication between the commissioners of each state and their governor and legislators; a recommendation was made that one commissioner from each state be a legislator.

Nevada WICHE commissioners noted a change in Governor O'Callaghan's general attitude toward WICHE after the adoption of the report of the joint committee. In discussing the 1979-81 WICHE budget with the governor in July 1978, the commissioners mentioned that they were proposing that the state return to paying the full WICHE support fee. The out-going governor stated that the state had the money to do it, but that he would not be around to help get the increase through the legislature. As it turned out, the huge surplus in the state's general fund was no longer a selling point in restoring full state funding by the time the legislature convened in January 1979 because of the strong support given tax-cutting Question 6 in the election.

Criticisms of WICHE involvement in non-student exchange programs and the resultant studies conducted in the period from 1976 to 1978 strengthened the support of western governors and key legislators for WICHE. However, the actions of the governor and legislature in Nevada in 1977, when criticism of WICHE was strong, continue to make the student exchange program less attractive in Nevada than in any other member states.

The Administration of WICHE in Nevada

The administration of the WICHE student exchange program went fairly smoothly in Nevada during the first eighteen years, from 1959 to 1977. Speaking for the University of Nevada at the 1959 session of the Nevada Legislature, President Charles J. Armstrong stated that if the state's membership in WICHE was approved, the university would "take care of the administration" of the program.[13] President Armstrong was subsequently appointed by Governor Grant Sawyer as one of the three original Nevada WICHE commissioners (Regent Fred Anderson and English Professor John Morrison were the other two) and served as Nevada certifying officer during the first eight years. Alice Terry, longtime secretary to the university president and board of regents, handled student applications and other administrative details under Armstrong and served as certifying officer for two years after Armstrong's departure from the state in 1967. Neil Humphrey, who succeeded Armstrong as Chancellor of the University of Nevada System, became the certifying officer in 1969, although most of the actual administrative work was conducted by Bonnie Smotony and Mary-Jo Antunovich. Humphrey decided in 1975 that Mrs. Antunovich should have the title of certifying officer, although he continued to play an active role as spokesman for the commissioners.

Certain actions by the 1977 legislature caused Chancellor Humphrey to withdraw from his involvement with WICHE. He stated that cuts in the budget for the Chancellor's office would not leave adequate staff to administer the student exchange program with the additional responsibilities occasioned by the legislative decisions to set up loan funds and to require reimbursement of support fees if students didn't return to practice in the state.[34] The two money committees disagreed on whether administration of the loan fund should be placed under the chancellor or the Nevada WICHE commissioners. One commissioner protested that the half-time certifying officer assigned to the commissioners could not possibly administer the loan fund in addition to other responsibilities. Nevertheless, the legislature placed the administration of the fund under the commissioners, and Chancellor Humphrey withdrew from any supervision of the administration of the student exchange program. Within a few months, Mrs. Antunovich resigned as certifying officer because the demands on her time were too great.

The Nevada commissioners did receive authorization to upgrade the certifying officer's position to full-time, with a half-time secretarial support position. The office is still located in the University of Nevada System building, but WICHE accounts have been transferred to the state system. In the future, WICHE commissioners would like to see a closer working relationship reestablished between the certifying officer and the University of Nevada System.

Future Prospects

Given the tax-cutting mood of the Nevada electorate, the governor and state legislature will probably be trying to avoid the establishment of more expensive professional schools in the near future. Therefore, Nevada will probably continue to use the WICHE student exchange program and bilateral contracts (where necessary) in dentistry, veterinary medicine, and optometry, and should at some time in the future add pharmacy, podiatry, and library science as WICHE-supported fields.

Law is one of the least expensive of the major professional schools to operate, and on the basis of the number of students who apply for WICHE assistance in Nevada, it is by far the most in demand. However, qualified Nevada students do not have serious problems being admitted to law schools; indeed, the recent law school feasibility study commissioned by the University of Nevada Board of Regents found that Nevada had the third highest acceptance rate of the eleven western states surveyed.[35] Although the need for a law school can be debated, it does appear to be the prime prospect for the next professional school to be established in the state. Architecture is also a program for which there is considerable demand, the establishment of which would not be as expensive as some of the medical and health-related schools.

The examination of events of the past four years shows that although WICHE is making a positive contribution to the state, all is not well with the WICHE student exchange program in Nevada. Hopefully legislative changes will be made to alleviate some of the criticisms and to forestall the large amount of legal action which otherwise will probably take place. Given the needs of the state and its students who have ambitions and dreams of attending professional schools, Nevada cannot afford to lose or damage further the WICHE connection.

Footnotes

[1] *WICHE Annual Report 1973*, Boulder: WICHE, January, 1974, p. 4.

[2] *Ibid.*

[3] *Ibid.*, pp. 4, 5.

[4] *Ibid.*, p. 5.

[5] *Ibid.*, p. 3.

[6] *Ibid.*

[7] "Minutes of the Board of Regents, University of Nevada," vol. 9, p. 442, June 1, 1962.

[8] *Ibid.*, vol. 10, p. 89, April 25, 1964.

[9] *WICHE Annual Report 1973*, p. 10.

[10] Assembly Resolution 15, 51st Session, Nevada Legislature.

[11] *Journal of the Senate*, 54th Session, p. 558.

[12] *Nevada State Journal*, March 29, 1967, p. 1.

[13] *Journal of the Senate*, 55th Session, Nevada Legislature, p. 411.

[14] *Ibid.*, p. 417.

[15] See "Report of the Educational Planning Committee to Chancellor N. Edd Miller" Don W. Driggs, chairman, December 1, 1967, p. 21.

[16] "A Proposal for the Development of a Degree Granting Medical School with Residencies in Primary Care," University of Nevada, Reno School of Medical Sciences, December 1, 1976, pp. 62-64.

[17] *Journal of the Assembly*, 59th Session, Nevada Legislature, p. 491 and *Journal of the Senate*, p. 560.

[18] "1960 Annual Report to the Governors and Legislators of the West," Boulder: WICHE, January, 1961, p. 5.

[19] *Student Exchange Program Manual*, 11th edition, Boulder: WICHE, June, 1976, p. 4.

[20] *Ibid.*, p. 7.

[21] Sen. Floyd Lamb, committee chairman, quoted in *Las Vegas Sun*, March 3, 1979, p. 2.

[22] Minutes of meeting of Nevaa WICHE Commissioners, August 1, 1980.

[23] *WICHE Annual Report 1973*, p. 5.

[24] *Ibid.*, pp. 6, 7.

[25] *Ibid.*, p. 5.

[26] "Report on Western Interstate Commission on Higher Education," by C. Brice Ratchford, p. 8.

[27] *WICHE Annual Report 1971*, p. 2.

[28] "Key Documents concerning the Western Interstate Commission for Higher Education," Boulder: WICHE, 1977, p. 5.

[29] *Ibid.*

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Computers in Higher Education: The Next Decade in Nevada

by Allen H. Brady

The computer revolution of the last half of the 20th century is frequently compared to the industrial revolution of the 19th century in its ultimate impact on modern society. These "logic machines" are working in concert with the microminiaturization of electronics to bring the revolution to the very inside of every small business, every classroom, and even the home. The giant multi-million dollar monster computers of the past have shrunk to innocent sizes. The cost of the machinery has been so severely reduced that at last the most important hidden component of the computer revolution has been exposed for careful examination. That component is people!

In a recent issue, *Business Week* devoted its cover story to the desperate situation in industry with the shortage of people who can put computers to work. It takes knowledgeable people to produce the "software" or programs which run the hardware. To further compound the problem, industry has begun to attract a large number of university computer science faculty away from college campuses with the lure of higher salaries, and better equipment and laboratories. Universities will find it even more difficult to educate specialists needed in business, government, and industry.

In Nevada these growing needs have been met by an immigrating population. Our universities and community colleges have by-and-large been attempting to build up their curricular offerings with existing staff and limited equipment. The demands of industry are seen only on the rare occasion when an attempt is made to fill an existing faculty vacancy with a specialist in "computer science." Typically, few persons apply.

The new academic programs in computer science and related areas which are still needed on Nevada campuses were anticipated in plans that were formulated over a decade ago! At the University of Nevada, Reno, the plans culminated in an interdisciplinary Master's Degree program given approval by the Board of Regents in 1970. The goal was the creation of a program which would offer retraining in Information and Computer Sciences to persons with undergraduate degrees in other disciplines. An immediate consequence of the program would have been the development of suitable programs at the undergraduate level similar to those just then being started in other universities and colleges.

The late sixties and early seventies were not a "good" time for new programs at the university, and the modest budget requirements of this program, which was formally approved in 1970, have not yet been met by state appropriations. The direction for all the campuses was set by this result: try to make do with existing faculty, try to redirect new hiring to computer specialists when positions become available, and otherwise hope that things will eventually take an upward turn.

The results of this "ad hoc" effort are seen as Nevada colleges have slipped rapidly behind while the computer revolution has virtually leaped into the 21st century. Week after week one can read articles in newspapers, magazines, and the computer trade publications on the unmet employment needs of the computer industry. To prepare students for careers in the applications of this growing technology the universities and community colleges in Nevada have attempted to build small programs within existing departments. In most instances a single faculty member has struggled for years to carry this load. When problems with accreditation have arisen, hasty patchwork has been applied. Meanwhile, community college programs in this key area have been left for the most part dependent upon "make-do" arrangements using part time instructors hired locally.

1980 can be seen as a turning point in this critical situation as pressure from Nevada business and industry builds on college and university administrators, and as students become more outspoken in their demands for bona fide academic programs. The public is exposed to the frequent discussions of computer technology in the popular media. Their elected representatives in the legislature will hopefully be more receptive to these particular needs of higher education in Nevada.

By the mid-1980s, if adequate support is given this area of need, fully accredited computer science degree programs will probably be found at both UNR and UNLV. A moderate increase will occur in the number of faculty supporting these programs as a redirection of administrative priorities effects constructive changes in this crucial area. Likewise, the community colleges should by then have more complete staffing for vocational instruction in computer-related areas. A concurring Board of Regents and a legislature sympathetic to these needs will be necessary to support the administrative leaders in achieving these goals.

The academic departments concerned with these programs already require at their immediate disposal computer equipment which is appropriate for their specialized instructional needs. It will be necessary to have modest but adequate budgets for the acquisition, maintenance, and replacement of this equipment as future needs arise. As the cost of personal computers continues downward, more students will possess their own minimal electronic equipment. Eventually, sophisticated universal digital communication networks will permit an endless variety of computers, personal display terminals, graphic printers, and other devices to "talk" with each other. The beginnings of such networks should exist on each campus soon.

Enrollments in these programs will greatly increase. Students who formerly would have gone out of state for computer science training will be able to attend Nevada schools. Demands from Nevada business and industry will continue to grow. High technology industry will begin to move to Nevada as this industry disperses from the crowded cities of Northern California. Additional demands will then be placed upon the Nevada campuses and a healthy growth in these programs will continue.

Computers will be a part of the education of most college students in Nevada by the end of the 1980s. An introductory study of computer science will be part of the curriculum of the majority of students. For nearly every student computers will play a significant role in their education. Computer aided or assisted instruction (CAI) will be part of many courses. Small freestanding microcomputer systems will work hand-in-hand with such new marvels of electronics technology as the video disk player. (Today, one Philips/Magnavox video disk can hold and provide instant access to the contents of an entire encyclopedia!) Students will be guided through significant course segments and occasionally through entire courses using such equipment.

The simulation of complex physical phenomena using computers will be available for students to observe and explore. Simulated streams and lakes will be polluted and made clean. Simulated nuclear reactors will be made critical and brought under control. Simulated highway systems will be studied and then relocated and reconstructed with a better design (for pennies!)

The computer revolution is affecting precollege education in Nevada as well. During the coming decade students entering college in Nevada will no longer be impressed by the mystique of "high priests" in remote computer "temples." Computers are becoming commonplace in the elementary and high school classrooms. (With the beginning of the 1980 school year there are more than 30 small computers in Washoe County School District classrooms.) These new students will expect their universities to have a lot to offer beyond the introductory level.

Interpersonal communications and human engineering will be studied by students of computer science. Computer-based systems which work to solve problems instead of creating more problems will be the expectation of a newly knowledgeable society. Those who have formerly sold themselves as experts in a field which few laymen understood will finally be called to test. In Nevada, professional practitioners in the rapidly changing computer industry must have opportunities for updating and continuing their education with the support of their own universities and community colleges.

Higher education in Nevada must be prepared to accept the new challenges of the computer age. It will be prepared when everyone who is involved with providing for the needs of higher education in Nevada finally becomes aware of the most important component of the computer revolution. As stated at the beginning, that component is not machines, it is people. The universities and community colleges must be allowed to add properly qualified faculty in order to produce properly prepared graduates.

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Educational Telecommunications in Continuing Education

by Robert E. Dickens

A great deal of recent literature has called attention to a remarkable trend in higher education, the phenomenon of the adult learner. Current wisdom has it that higher education is in trouble because the post-World War II baby boom has been superseded by small families, working parents, delayed starting of families, birth control and so on. The bottom line is that there are fewer college-bound eighteen and nineteen year olds.[1] The answer, it is argued, rests with the recognition that continuing education has come into its own, that its role for the 1980s is to revitalize our colleges and universities by encouraging institutions to involve themselves in both the education of post-adolescents and adults, making learning a lifelong process.[2] We conclude that as a consequence, Nevada's institutions of higher education must adapt to a new and intriguingly different student. To facilitate this adaptation, faculties and administrators must be persuaded that the adult learner requires and expects changes in the usual conduct of higher education.

This article is an exploration of UNR's existing resources with which to respond to the oft-cited "new student," the adult learner. The regional economy of gaming, transportation, warehousing, light manufacturing, and service industries assures a demand for the dissemination of knowledge tailored to many specializations. More important, however, are intrinsic characteristics of the University of Nevada, Reno. For example, the land grant mission of the university has required extending its agricultural research, teacher education, mining, and engineering programs to the boundaries of the state. Agricultural Extension is the most obvious example, with permanent staff agents in 14 Nevada counties. Additionally, the University of Nevada's Division of Continuing Education provides off-campus academic credit programs, professional conference, and short courses aimed at health professionals, teachers, mining engineers, law enforcement and fire protection agencies, as well as business programs for insurance, real estate, warehousing, and gaming enterprises.

As we look toward the 1980s, what trends seem to be emerging? Who are these new adult students? What do they want, need, and expect from existing institutions of higher education? What can we reasonably foresee as an institutional response to these students?

One thing is certain about Nevada — it is unique. Northern Nevada, for example, contains roughly 92,000 square miles with a population over 100,000. What we have then is space and distance, as well as rural and urban clusters of population. Furthermore, the historical imperative of the land grant mission, that is, to establish, maintain, and cultivate close ties with statewide constituents, tends to help identify the population of adult learners to whom our effort must be directed.[3]

In Nevada, adult learners are likely to know what they want from higher education, and they desire to maintain independent and individual control of educational programs. Adult learners also expect a pragmatic response from state agencies determining educational requirements for certification or licensure matched by quality programs offered by institutions toward which they turn for the knowledge they need.[4] Moreover, their expectation is that such programs conform to recognized, accepted, and widely shared standards — in short, that continuing education be credible and legitimate.[5]

The geographical context in which Nevada's lifelong educational needs are expressed and met determines in large measure the outline of the University of Nevada, Reno's response to these needs. How are resources concentrated on Nevada's western border to be delivered to constituents three hundred miles east? Or to mining engineers or judges located in other states or countries? Traditionally, the thought was not to deliver at all, but to bring the adult learner to the campus. As we confront the economic and technologic realities of the 1980s, we will face a near reversal; the campus will more frequently be brought to its new student, the adult learner.

UNR has and continues to develop a respectable and innovative capability to combine the land grant extension mission with its communication capabilities. The resulting synthesis is called "educational telecommunications." Most of us are familiar with some instructional uses of communications technologies. Language laboratories, record and tape libraries, listening centers, and video-cassettes aimed at health and legal professions are commonly recognized at all educational levels. Educational television programs such as "Sesame Street" and "Electric Company" which are broadcast on public, noncommercial television channels are another aspect of educational telecommunications. More sophisticated uses are found in areas involving computer simulations and interactive computer-based programmed learning packages dealing with an amazing array of topics.[6] Clearly, as learning becomes a lifelong process, it becomes increasingly characterized by applications of communications technology. What accounts for this phenomenon?

Alvin Toffler, the noted futurist, attributes it to the covergence of powerful contextual forces not unlike those presented by the state of Nevada.

> The most immediately apparent is the economic trade-off between transportation and telecommunications. Most high-technology nations are now experiencing a transportation crisis, with mass transit systems strained to the breaking

> point, roads and highways clogged, parking spaces rare, pollution a serious problem, strikes and breakdowns almost routine, and costs skyrocketing.[7]

Let's examine the "trade-off between transportation and telecommunications" as it affects the lifelong learner. The non-traditional student of higher education is likely to live a full, complex existence which rarely allows travel for educational purposes. When there is time for travel, it is often for shorter periods than those required for granting of a post-secondary degree or the simpler renewal of a license or certificate required for the practice of a variety of endeavors ranging from real estate to medicine.

Given UNR's land-grant mission, its close historical ties to its statewide constituents, its noteworthy academic specializations in agriculture, engineering, mining, and other areas, and the dilemma presented by the trade-off between transportation and telecommunications, how can we continue to honor our past and generate a role for ourselves in the future? The answer, in short, is increased use of educational telecommunications. We must examine our curriculum and encourage its development in a manner compatible with available instructional technologies. Faculty incentives for adapting existing materials to emerging telecommunications pathways should be created thereby blending research and publication with use of telecommunications to augment peer review, presentation of findings, refinement of research, discussions of appropriate methodologies, and a host of other professional concerns. Further, the initiation of a dialogue between the university and its constituents using available techniques would tell us much about their needs and stimulate the search for their satisfaction. Fortunately, the adult learner can tell the professional faculty what it needs to know. No longer must the academician sit *in loco parentis* as to what information a student must have to fulfill a role in future society. We must adopt a progressive view and pragmatic administration of higher education to meet these needs. Finally, we must use what we already have, primarily through searching for applications of educational telecommunications unfettered by the familiar and challenged by imagination.

What have we available? In February 1980, the University of Nevada, Reno initiated its teleconference system known as UNITE (University of Nevada-Reno Instructional Teleconferencing for Education). Strategically located rural learning centers coupled to the main campus by long distance microwave communications provide the capability to reach 92,000 square miles simultaneously. The communications mode is interactive — people can hear and talk to all other conference participants. Field representatives of mining corporations can be linked to one another and the College of Mines faculty consultants located on the main campus. Physicians in rural communities can confer on difficult diagnoses with the School of Medicine. And departments and colleges with small travel budgets can present papers more frequently with less travel. The adult learner — a new student paradoxically already trained and quite possibly a better learner — can maintain and enhance his other career from what Toffler calls "the electronic cottage," a learning center if not in one's home, quite conveniently located near it, often within less than five miles.[8] Components within the university system — the Desert Research Institute North and South, the four community colleges, and the two universities themselves can now be linked for any mutually agreed purpose.

What we have here is a foreseeable, substantial change in the learning environment. Technology and transportation — the great trade-off — converge with a different type of learner. The technology of telecommunications is indeed suitable to the adult learner because of its utility. The Carnegie Commission on Higher Education[9] provided some insights into the changing environments and process of learning to be expected in the 1970s, noting especially that technological aids to instruction must be available where and when needed, usable at school or home, amenable to student interaction to avoid passive learning, capable of adjusting to student input, and receptive to sensory input from more than one modality in order to have one sensory channel reinforce information learned through another. Instructional teleconferencing via UNITE is one such technology — it meets all the aforementioned criteria. Can one always say the same of on-campus mass lectures, laboratory sessions, and seminars?

The UNITE system is available now, and can be improved. While the foregoing technology has been voice only, a visual component is the next logical step. The addition of telewriters, facsimile copying machines, and slow-scan video capabilities would enable conference participants to see and hear one another. Whether the occasion is a doctor concerned about a patient's diagnosis and treatment, public officials coordinating emergency responses to a man-made or natural disaster, or public employees conducting governmental business in a cost-effective fashion, the visual aspect will soon be as necessary and desirable as our current audio capability.

As we move into expanding on-site technologies to include a visual capability, we will witness the convergence of communications and broadcasting primarily through dependence on similar conveyance technologies. One must remember that communications in Nevada is determined largely by geographical context. The fourteen northernmost counties of the state represents about 83 percent of the land area and less than 25 percent of the population. Simply stated, the problem is reaching rural population clusters scattered over the state by the diversity of our mining, defense, agricultural, and gaming economy, a difficulty not made easier by the region's rugged topography. The large valleys situated between ranges of mountains running hundreds of miles north and south, require existing statewide communications to literally travel from mountaintop to mountaintop by microwave transmitter and video-translator.

The high technology of the micro-chip industry has led to commercial applications which match the challenges of geography. The means is the use of the geostationary point in near space occupied by such modern communications satellite as Westar I and II. Satellite communications have already created the following scenario, reported in the Denver Post, October 12, 1980.

> New FCC Ruling
> To Bring Clear TV
> Into Wyo. Town
>
> WASHINGTON — The residents of Rock River, Wyo. — all 300 of them — soon will receive clearer television pictures, thanks to a new policy just formulated by the Federal Communications Commission.

The Rock River non-profit project was put together by Dick Shroeder, the town marshall, and ground breaking for the transmitter is expected in a week or two.

The low-power station, at a fraction of the cost of high-power facilities, will cover only a limited range. Subscribers will pay $10 a month for an "unscrambler" on their individual sets to get the clearer picture.

As soon as a $50,000 transmitter is constructed, Rock River residents, who now receive poor images on their screens because of the town's location in mountain country, will receive television signals from a communications satellite.

Community stations present an opportunity for in-depth examinations of local elections, issues and activities that simply cannot receive the attention they deserve on a larger station that must meet the needs of a wider audience, he said.

How will this and the next generation of satellite communications effect continuing education? To begin, it will be useful to divide the following discussion between technical and programming aspects. One must view things from the point of view of a satellite. (For a quick reference watch a television weather broadcast of the Western United States with its satellite pictures.) The technology, stated simply, would involve the establishment of a master control center linked to currently operational commercial communications satellites. From the satellite, the broadcast would be received by a series of small ground stations, each the essential duplicate of another, located wherever desired around the state. Conceivably, each rural community school district, local government, or industry could have its own receiving station from which it could rebroadcast the satellite signal, adding components to the local community broadcast which would identify the locally owned and controlled ground station as a rural community "mini-station." What distinguishes the unique character of this technical approach is the introduction of an interactive component such as the UNITE system. Combining telecommunications will allow the viewer to see, hear, *and* talk to an instructor, conferee, or consultant.

The educational aspect of this scheme is found in the fact that public broadcasting can be instructional as well as aimed at sophisticated entertainment for a subscriber and underwriter audience. To be applied to Nevada, it must demonstrate the additional element of academically sound instructional value. With an interactive component — the ability for video-assisted communications to be exchanged in simultaneous live occurrences — educational programs can be added. Teachers, doctors, lawyers, law enforcement officers, local officials, business people, and all residents of rural communities could receive educational broadcasting from all Nevada's higher educational institutions.

Local control of programming would be enhanced by decentralized distribution of ground mini-stations. This too would be determined by geography and population clusters which seem foreseeable in Nevada as it moves into a new boom of energy, mining, and possible MX missile developments. The wide dispersal of Nevada's population is not terribly important in this scenario since satellite signals broadcast into rural areas make a broad footprint on the state of Nevada. Whatever is in store for this state in the next two decades, we are certain to need to communicate with our constitutents — those requesting, not unreasonably, that their higher educational institutions find innovative means to extend themselves to their constituents' needs for knowledge and the exchange of ideas.

To be sure, there are complications — most which the reader has probably concluded — which make this futuristic glimpse something less than an absolute certainty. Money and other costs spring to mind. Perhaps the issue is better seen in light of mechanisms to collect resources to make such a thing happen. Since public educational broadcasting is based on the notion of local control, we need only be concerned with how a participating community would avail itself of the opportunity to add to its community life the element of public broadcasting, defined as a complement of radio and television programming aimed at a community's educational, cultural, and recreational needs. Those needs, given the element of choice in participating in the selection of local programs and particiaption, would be identified and addressed within the local community — precisely where Nevadans characteristically want them.

The elements of choice and control at the local level also suggest a funding strategy based on community participation, particularly of local institutions, both public and private. Public institutions such as general improvement districts dedicated to provision of television to rural communities already exist throughout the state, as evidenced by the existing translator network. With recent additions to statutory regulation of funding mechanisms for such districts, (NRS 318), the financing alternatives now range from per capita assessments to fees keyed to the type of structure served (hospital, court house, public school, or home). The existence of such a legislatively controlled institution as the television facility improvement district ensures oversight as well as local control, particularly due to their being created by a County Commission, approved by the county electorate, and administered by a local advisory group.

Another problem associated with continuing education as practiced through educational telecommunications is the extent to which existing higher educational institutions are able to adapt to the needs of rural Nevada. The lecture-oriented approach, for example, must be augmented by carefully prepared mediated materials ranging from audio tapes to videotapes, and in the near future, videodiscs. Traditional academic values require guarantees of rigor and excellence, particularly if continuing education via telecommunications becomes oriented toward awarding a baccalaureate or graduate degree.

To be sure, not all degree programs are suitable for granting through this medium. One could not, to cite an extreme case, become a doctor by telecommunications, but one could become a more knowledgeable practitioner through teleconference applications of continuing medical education. However, these communications techniques offer a host of opportunities. One successful medical education program involved an experiment using satellite communications to link 35 Western hospitals including one in Nevada for the purpose of demonstrating diagnostic, nursing education, and data exchange capabilities. A more suitable use of the medium might be an offering from the liberal arts curriculum, or one involving a mixture of on-campus and telecommunicated offerings. Certainly, some response is required to constituents demanding tax reform as a result of negligible perceived returns from state institutions — including those performing the task of higher education.

Organizational innovation will be necessary within the University of Nevada System to adopt current registration procedures, student fee mechanisms, library resource availability, instructor office hours, advisement, and the rest of the routine functions which characterize the organizational life of higher education. Faculty attitudes toward "taking the hill to the people" will necessarily need to undergo some transformation. Incentives for change must be established which encourage and facilitate participation in continuing education and telecommunications. Statewide support for higher education must be solicited and delivered when and as promised. The administration of such programs requires attention to cost-effectiveness and consistent demonstration of academic quality. Indeed, such a program must maintain its credibility. Several times of late, continuing education programs outside of Nevada have been linked with fraud in intercollegiate athletics as means to maintain athletes' eligibility or as a "quick fix" for many small colleges whose endowments have been ravaged by inflation and an unstable economy.[10] Finally, the most challenging task is the attempt to remain knowledgeable about relentlessly changing technologies — mini-computers, videodiscs, slow-scan video, fiberoptics, and satellite communication with miniature, low-power transmitters scattered across Nevada, virtually wherever wanted.

In summary, the encouraging news is that educational telecommunications is already an active part of higher education at the University of Nevada, Reno. In essence, part of the future has arrived. The UNITE system, for example, is providing continuing education programs to 260 real estate, insurance, and health professionals for approximately $57.00 per student for the Fall 1980 programs. Coupled with more programs and expanded technical capabilities allowing more communities to become a part of the UNITE system, continuing education through educational telecommunications promises to become increasingly cost effective. The 260 adult learners mentioned above, it should be pointed out, would not be receiving the number, type, and quality of program in their rural communities without the marriage of instructional technology and continuing education. Through the '80s, the acquisition and implementation of existing and foreseeable educational telecommunications such as color slow scan video, computer-based learning packages, and instructional televison, promise change, adaptation, and growth in the number of students and offerings provided to the citizens of Nevada.

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The History of Formula-Based Budgeting for Nevada Universities

by James T. Richardson and K. Donald Jessup

Development of Formula Budgeting Approach

Formula budgeting for higher education had its beginnings in Nevada with the simultaneous publications in 1968 of "Nevada Higher Education to 1980" by the Higher Education Advisory Committee (HEAC) and "Charting a Course for the University of Nevada System," a ten-year plan produced by the Chancellor's Office of the system. These publications both suggested an enrollment-driven formula for funding Nevada higher education, which consisted at the time of the University of Nevada, located in Reno, and Nevada Southern University in Las Vegas.

The perceived need for such a formula was generated by the situation which existed at the time. UNR, then known as the University of Nevada, had existed in Reno for 90 years and had well-established graduate and professional programs in many areas, a large physical plant, and longstanding traditions. It was also considerably larger in enrollment than its "daughter" institution in Las Vegas, then known as Nevada Southern University, which granted its first baccalaureate in 1965. NSU had practically no graduate programs, very few physical facilities, only a handful of graduates, and almost no campus traditions.

NSU, however, was located in Clark County, which had 53 percent of the state's population. The 1969 legislature faced the task of reapportioning itself and the University Board of Regents to reflect the growing proportion of the state's population which resided in Southern Nevada. This situation caused the Chancellor's Office to try to design some method of developing budget requests for the newly formed system which would provide adequate resources and provide some equity of resource allocation between the two institutions.

Formula budgeting based on "full time equivalent" (FTE) students was very much in vogue at the time, with some 25 states using some sort of formula as a basis for compiling budget requests. After review of these other states' approaches, a formula was developed for the budget requested submitted to the 1969 legislature for the 1969-71 biennium. The heart of that formula was a ratio of FTE students to faculty positions. The definition of an FTE student was 16 student credits at the undergraduate level or 9 student credits at the graduate level.[1] These student credits were fall term, gross student credits, measured at the sixth week of the fall semester. After calculating the number of faculty allowed under the formula, the faculty number could then be used in formulas determining the number of graduate assistants, the number of classified positions, the number of wage positions (hourly rate employees, most of whom are students), operating expenses, and out-of-state travel funds. Thus, the student/faculty ratio was to become the major building block for future budget requests, and the amount of funding for nearly all activities in the teaching and research areas of the two institutions would depend directly on the student/faculty (S/F) ratio.

Adoption of 20:1 Student/Faculty Ratio

Both the Higher Education Advisory Committee and the Chancellor's Office recommended that the S/F ratio which then existed at the two institutions be gradually modidifed on a year-by-year schedule to achieve a ratio of 20 FTE students to 1 FTE faculty by 1980. The HEAC study indicated that the S/F ratio for UNR was 15 to 1 in 1967-68, and the ratio for NSU was listed as 19.4 to 1. At that time the HEAC study predicted that the FTE enrollment of both UNR and NSU (UNLV) would exceed 10,000 by 1980, and thus economies of scale would allow for the implementation of this high ratio.

The regents accepted the recommended plan over objections from faculty at both institutions, and Governor Laxalt included formula-based budgeting as a part of the Executive Budget recommended to the 1969 Legislature. The approach was approved by the legislature, and some small movement toward an eventual 20-to-1 ratio planned for 1980 was made during that biennium.

In 1971, much to the consternation of those associated with higher education, Governor O'Callaghan's Executive Budget as sent to the legislature recommended that funding for UNR and UNLV be based on a 20-to-1 student/faculty ratio *immediately*. This recommendation, which would force a cut of about 25 faculty positions at UNR, apparently derived mainly from perceived funding limitations and political decisions about what areas could be cut with impunity.[2] The decision was made in spite of the fact that FTE enrollments were around 6,000 at the time for both institutions, rather than the 10,000 recommended by HEAC and the Regents for the imposition of a 20-to-1 ratio. The governor's recommendation was accepted by the legislature, and subsequent executive budgets and legislative action have generally been based on this funding ratio for UNR and UNLV, with some modifications which will be discussed. Thus, the 20-to-1 S/F ratio has dominated university funding since 1971.

Critique of 20-to-1 Student/Faculty Ratio

A key reason for the Higher Education Advisory Committee recommendation that the two universities eventually move to a 20-to-1 ratio was a 1967 study done by John Bolin of the University of Geörgia, in which he reported that the average S/F ratio for medium-sized public institutions (those with enrollments of 2,500 to 7,500 FTE students) was 20-to-1. Since the Bolin study played a key part in the process of moving to that ratio, it is worth reexamining.

First, the Bolin study was based on a limited sample of data and schools. Only a few questions were asked of relatively few schools, and the small number of schools did not allow proper analysis. UNR physicist William T. Scott, in a memorandum to university administrators in 1972, pointed out that using medium-sized, public institutions was very misleading since *it did not take into account the level of degree granted*. Scott, using the list of schools included in a larger and more recent study by Bolin and McMurrain, and other data, calculated the student-faculty ratio for middle-sized, public institutions *by level of degree*. Such institutions offering Ph.D. degrees (as does UNR) had an average ratio of around 16.7 to 1, a value a great deal less than the one adopted.

An example of the effect of such a difference in student/faculty ratio may be instructive. A university of 6,000 FTE students (UNR's approximate size at the time) using 20-to-1 as a basis for budgeting would have 300 FTE faculty, whereas the same university using 16.7 to 1 (the approximate *mean* for middle-sized Ph.D.-granting public institutions) would have 359 FTE faculty — a difference of 59 FTE faculty.

The conclusion that the 20-to-1 student/faculty ratio had been misunderstood and misapplied to UNR gained more support from a study presented in February, 1973, to the Graduate Council of UNR.[3] In this report a detailed analysis of national student/faculty ratio studies was made, in an effort to see how UNS and UNR compared in terms of funding support. The Bolin and McMurrain study used by Scott was found to be flawed because it presented averages instead of medians, so that the few schools with very high ratios were able to distort the more general picture. Also, the Bolin and McMurrain study apparently assumed that some professional schools were not included in calculating such ratios, which meant that the *low*-ratio components of several of the schools were not counted, again leading to a falsely high average. Had medians been used and had Bolin and McMurrain's data base included professional schools, which nearly always have lower ratios, a more accurate student/faculty ratio picture for the nation would have emerged, and that picture would have been one of even lower average S/F ratio than was presented.

Presenting the average student/faculty ratio resulting from using averages and excluding professional schools made the difference in S/F ratio between UNS and the rest of the nation a bit less dramatic than was actually the case. However, the difference between even the average S/F ratio and that used in UNS was still dramatic, as indicated by the above calculation of the difference of 59 faculty positions between a 16.7-to-1 S/F ratio and a 20-to-1 S/F ratio.

The Graduate Council report also examined another relevant study — one done by Behrens in 1972 entitled "Higher Education With Fewer Teachers." The Behrens study focused on 80 colleges and universities which had seen their funding ratios increased to 20-to-1 in recent years, describing how institutions had accomplished this move to a higher ratio. A close examination of the study reveals that UNS and perhaps UNR in particular again compared very unfavorably to the national picture. Only 14 of the 80 schools included in the study granted doctoral degrees, and none of these was nearly as small as UNR; the average size of doctorate-granting schools in the Behren study was 13,927 FTE students. Also, some of these same schools reported that they excluded some professional schools from the calculation of the ratio, whereas most of the professional components were being counted in the computation of the UNR ratio. Thus, Nevada again compared poorly to the national situation. As far as can be discerned from the Behrens and Bolin and McMurrain studies, *the University of Nevada, Reno was one of the smallest doctorate granting institutions of higher education in the nation forced to use a 20-to-1 S/F ratio as a budget goal.* Recent studies, such as that of Knorr and Coburn in this collection, indicate that this situation apparently has not changed in the more recent past.

Modifications of the Budget Formula Approach

Some elements in the S/F ratio formula have been modified several times since its adoption. The net effect of these changes has been to *decrease* the number of faculty available in instruction even though, as just indicated, the S/F ratio used with UNS was already quite high, especially for UNR, the Ph.D. granting institution of the system.

The original 1969 definition was based on the number of students enrolled during the fall semester and was a gross figure (it did not exclude withdrawals). In 1975 the FTE student concept was changed to include the average of the number of FTE students enrolled in the fall and spring semesters. Moreover, withdrawals which occurred during the regular enrollment period were subtracted from the total. This change of definition was intended to be used in conjunction with other changes that involved establishing student-faculty ratios by *level of instruction* and *type of program*. The State Budget Office in 1976 accepted the revised definition of an FTE in its funding formula, but did *not* accept the complementary differentiated ratios concept. These changes resulted in a loss of about nine percent of the yield of authorized faculty positions that the previous definition of FTE student would have allowed.

Another change that occurred was to include graduate assistants as a part of the FTE faculty authorized by the 20-to-1 S/F ratio. This was also part of the effort to get the State Budget Office to accept differentiated S/F ratios for different levels of instruction. However, again the State Budget Office accepted only the change that resulted in fewer authorized FTE faculty positions. This action resulted in loss of an additional approximate four percent of the FTE faculty positions that would have been authorized under the old definition of FTE faculty.

The net effect of these changes was a loss of about 13 percent in the number of faculty positions authorized in the major budget area of the two institutions. At UNR alone, over 40 FTE faculty positions which would have been authorized under the old definitions were disallowed under the new. Obviously these changes increased the difficulties caused by the sudden imposition of the 20-to-1 S/F ratio.

Some relief was offered to this problematic situation in 1977 when Nursing was extracted from the calculation of the overall S/F ratio, and was allowed to have a separate ratio of 7.5-to-1, as required for accreditation.[4] This change, brought about in part because of lobbying efforts by some UNR alumni, increased the "yield" of the formula about 2.5 percent, and helped relieve some pressure in understaffed areas on the two campuses.

In 1979, another positive change occurred when the number of student credit hours defined as a Full Time Equivalent student was modified. The change was from 16 to 15 at the undergraduate level and from nine to eight at the graduate level. These new figures better represented the average number of credits taken by students, and also were more in line with the FTE student definition used at other institutions. This change increased the yield of the formula by about seven percent.

The net effect of all these changes in the original formula has been to decrease the yield of the formula about 3.5 percent. With respect to the 1980-81 faculty at UNR, this 3.5 percent translates into about 12 positions more than are currently authorized. There has been a similar effect at UNLV.

Impact of Enrollment Patterns on Formula Budgeting

Since the adoption of formula budgeting and the S/F ratio as the major element of the formula, there have been two major shifts of enrollment patterns that have effected the formula. These shifts have placed greater demands on UNR and UNLV, at a time when resources are already in short supply. Data from UNR indicate that it has become more of an upper-division and graduate institution than was the case a few years ago.

In 1971-72 59 percent of the FTE enrollment was in lower-division courses, while 28 percent was in upper-division courses, and about 12.5 percent was in graduate courses. In 1979, 56 percent of the FTE enrollment was at the lower-division level, about 32 percent at the upper-division level, and 12.5 percent at the graduate level. This means a drop of three percent at the lower-division level, and an increase of four percent at the upper-division level, using FTE students.[5] As is well known, upper-division and graduate offerings require more time and individual attention from faculty, and thus more faculty are needed when an institution becomes more of an upper-division institution.

The other significant shift concerns the rapidly changing relationship of "headcount" students to FTE students. In the Fall of 1973 at UNR the FTE student (annual net) count was about 91 percent of the annualized headcount student figure. By fall, 1979, this figure had dropped to 74 percent. From 1973 to 1979, the FTE student count (using "annual net") increased by nine percent but during the same time the total annualized headcount number grew about 22 percent. This dramatic shift means that, for a given FTE student number (the figure on which most funding is based), there are significantly more actual students to educate. This is particularly true at the graduate level, which has had a 51 percent increase in headcount students from Fall, 1973 to Fall, 1979, and at the upper division level, which has had a 20 percent increase in headcount students during the same time period. Students are demanding courses and programs in which to major and the university must try to meet those demands. The relatively larger number of students need advising and counseling, and, because more of them are upper-division and graduate students, they require more and smaller courses in their areas of specialization. In addition, several support areas such as admissions and records and student services are effected directly by the number of headcount students. This marked increase in the headcount students calls for more faculty and support staff, but funding is tied to FTE student numbers, not headcount numbers.

UNLV has generally had fairly rapid growth in the FTE student number since its inception, so there has been some influx of new faculty and more budgetary flexibility in meeting problems faced by that institution. However, recent data indicate that they, too, are in a similar pinch concerning one change of meaning of an FTE student. UNLV has not seen the shift toward more of a graduate and upper-division institution, but the problem of the comparison of FTE to headcount students is more pronounced at UNLV than at UNR. Fall FTE and headcount student numbers for UNLV for 1974 to 1979 indicate that there have always been more headcount students per FTE student at UNLV than UNR, and the relationship has changed in the same direction as at UNR. In 1974 the FTE student total was about 73 percent of the headcount total, but in 1979 this relationship had dropped even lower to 65 percent. Thus UNLV first and then UNR have both had to labor under a S/F ratio that has not taken into account the high ratio of headcount to FTE students. One UNLV administrator said ". . . it is not FTE students that park their cars, walk on the grass, drink coffee in the Union, flush the toilets, and require record keeping, academic advising, and personnel counseling — it is headcount students that do and need these things."

Conclusions

These comments on problems with the 20-to-1 S/F ratio, with changes in the budget formula elements and with shifts in enrollment patterns, should not be taken as opposition to the use of a student/faculty ratio approach to higher education funding. Such a method offers much in terms of ease of communication with those in state government and with the citizenry of the state. It is difficult to think of a better overall way to deal with such complex issues in Nevada. However, such a budgetary method must be sensitive to differences between institutions, to major shifts in the meaning of crucial elements and to shifts in enrollment patterns. Also, such an approach should take into account national comparisons of S/F ratios for types of institution.

The UNR Faculty Senate and others have supported a more meaningful use of student/faculty ratios which incorporates differentiated ratios by level of instruction, distinguishing between lower-division, upper-division, and masters and doctorate level. The senate also has supported special separate ratios for certain professional programs such as medicine, nursing, and engineering, and the removal of graduate assistantships from formula calculation, among other recommendations. The System Administration and the Board of Regents have adopted some of these ideas but have had limited success in getting state government to accept the modifications.

The Legislative Commission of the Legislative Counsel Bureau of the State of Nevada has supported modifying the formulas used for higher education. In a study published in 1976 entitled "Budget Formulas and Formats for the University of Nevada System" the commission endorsed the formula budget approach being used for the university instruction and departmental research funding requests, but made a companion recommendation of note. They said:

> Formulas, once devised and generally accepted, must not be taken for granted as satisfactory for all time. The subcommittee recommends that the university system, the budget division in the department of administration and the legislature continually monitor accepted formulas for equity and adequacy in meeting the objectives of the system. (p. 56)

Recommendations

Specifically, we recommend the following, based on the assumption that Nevada needs and desires quality higher education for its citizens: the S/F ratio applied to UNR and UNLV should be examined and adjusted so that Nevada higher education institutions are supported *at least* at the national average in terms of the type and size of institutions, and the level and type of degree programs being offered. A more sophisticated approach would be to develop a fair and reasonable set of *differentiated ratios* by level of instruction and type of degree program, including distinguishing between masters- and doctoral-level work. Either approach would help solve the severe problems associated with trying to operate with such a high ratio, especially given the changing make-up of the student body.

We also recommend examining the way in which the number of authorized faculty is used in secondary formulas to calculate such things as the amount of operating funds, the number of graduate assistants, out-of-state travel funds, and the number of classified positions allowed.[6] A more programmatic approach would be useful in some of these areas to allow for the type of degree program being offered, and the amount of actual support needed for such activities. For instance, the formula applied state-wide by the State Budget Office for calculating the number of graduate assistantships regularly recommends a cut of about 25 percent of the assistantships at UNR. To accept such a sizeable cut would virtually wipe out some graduate programs at UNR, and would effect the quality of teaching and research as well. Also, the cut would take away financial support for a number of students who use assistantships for partial or total support for their graduate studies.

Another example of the negative effect of using such a low FTE faculty number in secondary formulas concerns operating money. "Operating funds" buy all supplies for departments (everything from paper to test tubes and chemicals), but must also generally be used to buy and maintain equipment needed in the teaching and research functions. The very limited amount of operating money during the past decade, particularly at UNR, has resulted in our students, both graduates and undergraduates, often being trained on out-moded equipment, or not trained at all to use some more modern equipment, simply because sufficient funds have not existed to buy and maintain the proper equipment.

Other elements derived from the FTE faculty number are also low when compared to similar institutions. Certainly lowering the overall ratio would improve this situation by allowing more FTE faculty, which would result in more graduate assistantships, operating, travel money, and more support personnel.[7] If it is not possible to adjust the overall S/F ratio downward, then at least some of these secondary formulas should be examined so that selected "relief" could be offered.

Another recommendation would be to find ways to integrate into the FTE student calculations credits taken during the summer sessions, during short sessions between semesters, and through continuing education courses. Presently not all such credits are incorporated, which places a burden on other programs and functions of UNR and UNLV. Since the state's citizens demand and need courses during the summer and through continuing education programs, it seems reasonable for the state to support them similarly to regular offerings.

One other point not directly related to S/F ratios at this time concerns library funding. The libraries of the two universities are *not* funded according to a formula and have been funded by the state in the past ten years based on such things as the cost of acquiring an arbitrary number of volumes or an inflationary increase over the previous year's allocation. Such methods perpetuate existing inadequacies, and libraries at both institutions are deficient especially when compared with other institutions with similar programs. There are several formulas created by academic librarians which relate need for staff and books to the type and level of programs offered. We suggest that these be examined and the most appropriate one be adopted so that this most important resource will be adequate to properly support the existing programs.[8]

If recommendations such as these can be implemented, then Nevada citizens can expect a dramatic improvement in the scope and quality of higher education available from UNR and UNLV. The very rapid growth of the state's population, coupled with the diversification of the state's economy, means that Nevada needs an increase in and improvement of higher education opportunities. We hope that the next decade will see higher education receiving the increased support necessary to meet the needs of our growing and changing state.

Footnotes

[1] The FTE student number was arrived at for the first four biennia of its use by (1) summing the total credits registered for by undergraudates and dividing that sum by 16, (2) summing the total credits registered for by graduates and dividing that sum by nine; and (3) adding the two quotients. The number 16 was derived from a simple division of 128 (the approximate average number of credits required for graduation at the time) by eight (the number of semesters in an ideal undergraduate program). The number nine for graduate students was simply defined as the average expected load of a graduate student. Both figures were higher than actual average loads, a fact which, coupled with the more typical lower figures used around the country, led to lowering these two parameters recently, as discussed in this article.

[2] Losing faculty positions is not as simple as it might sound. Some might think that a loss of eight percent of the faculty only has the effect of increasing the average class size slightly. This is not the case; a university faculty is a group of specialists whose skills are usually not directly interchangeable. Losing faculty positions means losing certain specialties, and results in the inability to offer some specialty courses, especially at the upper division and graduate levels. This means that the university may not be able to offer certain majors needed by students. The problem is compounded by a sudden loss of positions because this allows little time for planning the cuts, and results in cutting by attrition, which is always arbitrary.

[3] The study was authored by James T. Richardson, who was then a member of the Graduate Council. One reason for the focus on UNR in this section is that UNLV was not (and is not) a Ph.D.-granting institution. Professional organizations such as the American Association of University Professors do not consider UNR and UNLV to be in the same category of institutions because of this difference. Also, UNLV has had a S/F ratio of somewhere around 20-to-1 since its inception.

[4] Other professional schools also have lower S/F ratio accreditation requirements as well. Apparently extracting Nursing from the overall S/F ratio calculation has as much to do with the fact that nursing programs of approximately the same size existed at UNR and UNLV as it did with any special status given nursing. The UNR Faculty Senate has recommended extracting some other professional schools because such changes could look like favoritism being shown to UNR, since it is the institution that has the greatest number of professional programs.

[5] Apparently the same type of shift has not occurred at UNLV, which has held fairly steady in recent years with 62 percent lower-division FTE enrollment, 26 percent upper-division, and 12 percent graduate.

[6] Please note that the FTE faculty number is *not* directly related to the average salaries of professional faculty. Salaries are determined independently by the Board of Regents in negotiation with the executive and legislative branches of state government. We state this point explicitly so that no one will wrongly interpret this report as a call for higher salaries (see Stoess paper in this collection for a discussion of salaries). There has been an indirect *negative* effect of the problems discussed in this report on professional salaries because when more faculty are so desperately needed, part of the salary increase money may be diverted from salary increases and used to hire more faculty than budgeting formulas allocate. Such was the case, for instance, in 1977, when UNR faculty, through the Faculty Senate, supported receiving lower average salary increases than faculty in other UNS divisions in order not to lose any positions and to add a few badly needed ones.

[7] The biggest problem with out-of-state travel money is the *amount* allocated per faculty member. That allocation is presently only $50.00 per FTE faculty, an amount totally insufficient to cover today's air fares, meals and lodging costs. The amount per faculty member is the same as it was a decade ago, and in fact was even less for a few years during the past decade. This unrealistic figure has forced the institutions to use an inordinate amount of discretionary funds (non state-appropriated) to allow at least some faculty to attend professional conferences. It has also forced faculty members (all of whom are expected to be professionally active) to subsidize personally their trips to professional conferences. The lack of funds in the area of faculty travel has discouraged many faculty from getting involved in their profession, and, especially since UNR and UNLV are so geographically isolated from other institutions, this lack of professional involvement has resulted in some faculty not being as up-to-date in their fields as would be desired. This, of course, directly impacts the quality of teaching, and means that the policy of the state regarding out-of-state travel money may be very "penny-wise and pound-foolish."

[8] A formula for determining the adequacy of library holdings is detailed in Verner W. Clapp and Robert T. Jordan, "Quantitative Criteria for Adequacy of Academic Library Collections," *College and Research Libraries*, Sept., 1965, pp. 371-380.

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Support of Higher Education in Nevada

by Owen Albert Knorr and Kari Coburn

Introduction

As we enter the decade of the 80s, it seems an appropriate time to consider the extent to which Nevada has been supporting its institutions of higher education and how this support compares with that of other states in the western region and with the national average. While some of the commonly used indicators or measures of support may be misleading when considered by themselves, all of them together present a pattern which is useful in conveying to the people of the state an understanding of their commitment to higher education.

Two Basic Measures

Two of the measures often used in assessing the support of higher education in a state are *appropriations per capita resident* and *per $1,000 of personal income*. Significant also is the percentage change in appropriations in recent years. These factors (Table 1, Graph 1) show that Nevada ranks 10th and 11th among 11 regional states in appropriations per capita and per $1,000 personal income in 1979-80. The leading regional state (California) appropriates 46 percent more money per resident for higher education than Nevada, and in the other factor, the leading regional state (Utah) appropriates 86 percent more per $1,000 of personal income than Nevada.

Table 1

Percentage Incease in Appropriations from 1977-78 to 1978-79

California	43	Wyoming	20
New Mexico	31	Montana	16
Oregon	26	Arizona	12
NEVADA	25	Colorado	12
Utah	24	Idaho	11
Washington	23		

Regional Avg	22 percent
Nevada Rank	4
U.S. Avg.	24 percent
Nevada Rank	15

Source: Chronicle of Higher Education, October 9, 1979, p. 6.

As this article was going to press, figures for the 1980-81 academic year were published. In appropriations per capita and per $1,000 personal income, Nevada held its low rank regionally among the 11 western states at 10th and 11th respectively. On the national scene, however, Nevada slipped from 27th to 31st in appropriations per capita and from 40th to 43rd in appropriations per $1,000 income. In terms of percentage increase of appropriations for the two most recent years, at 24 percent Nevada was down a notch from 4th to 5th regionally and from 15th to 17th nationally. However, with an inflation rate of 18.4 percent during the past two years in the prices paid by colleges and universities for goods and services, the real increase in appropriations for Nevada higher education amounted to only 5 percent.

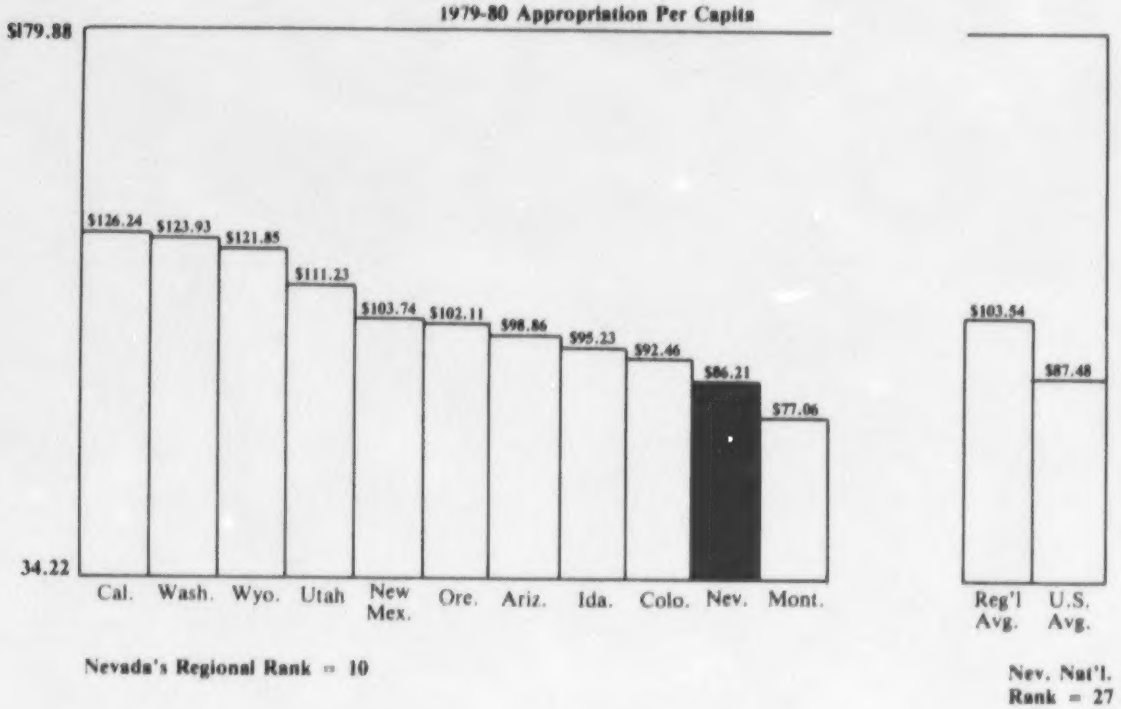
An Eight-Factor Approach

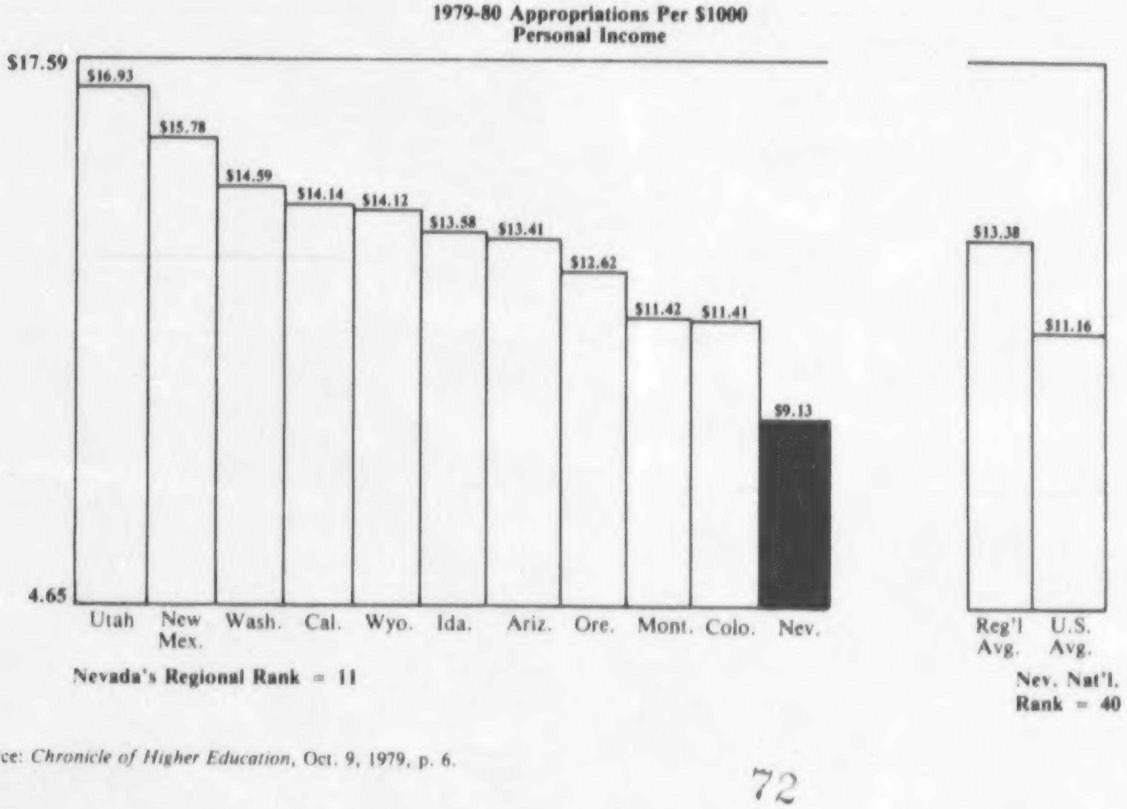
A much more sophisticated analysis of higher education and its support among the 50 states and the District of Columbia has been done by D. Kent Halstead, a research economist at the National Institute of Education. His findings first appeared in the *Chronicle of Higher Education* in 1976. More recent refinements are displayed in Table 2 which shows the national range, the national average, and Nevada's position. Halstead uses eight factors, categorized as to inputs, output, and process, starting with the basic inputs of resident student sources (high school graduates) and college attendance ratio. He considers tax capacity and tax effort, as well as actual appropriations, and adjusts for cost indices. The final products are three measures showing the inputs and output in state tax-supported higher education plus a collective financial measure giving the extent to which state governments have utilized their potential combined inputs to achieve the actual support provided.

Analyzing the Halstead formula, factor by factor, is an interesting exercise. Nevada ranks near the bottom of the states (48th) and last (11th) regionally in high school graduates per 1,000 population, a fact probably attributable to the major industry of the state which tends to attract individuals rather than families with children to raise. However, Nevada stands sixth regionally in college attendance ratio. This measure is the number of full-time equivalent (FTE) students in public institutions per high school graduate. The measure indicates how Nevada higher education attracts both resident and non-resident students with accessible post-secondary education. Halstead then combines these first two factors into a student enrollment load measure in allocating operating expenses on a per user basis. Nevada stands 23rd in the country at just about the national average, and 10th (of eleven) regionally.

Turning to tax capacity and tax effort, Halstead has determined the potential tax revenue the states could raise if all 50 state and local governments plus the District of Columbia applied identical tax rates to their own tax bases. In tax capacity, Nevada stands second in the country and second in the region. On the other hand, tax effort

Graph 1
Appropriations for Higher Education in Eleven Western States

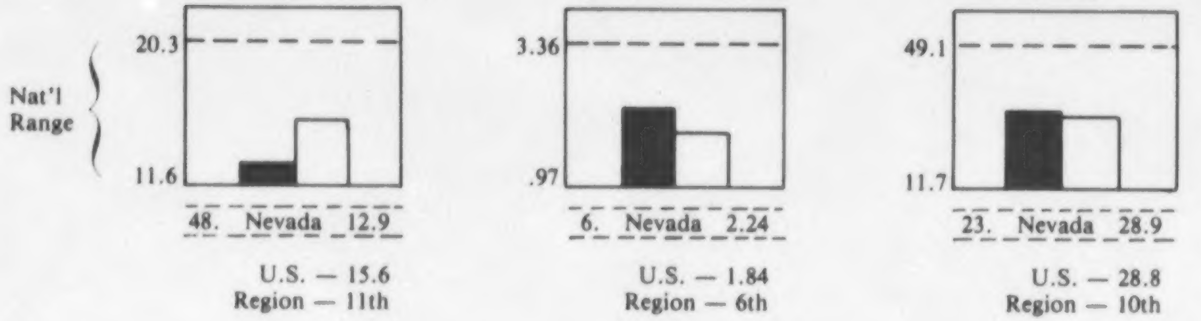

1979-80 Appropriation Per Capita


1979-80 Appropriations Per $1000 Personal Income

Source: *Chronicle of Higher Education*, Oct. 9, 1979, p. 6.

Table 2

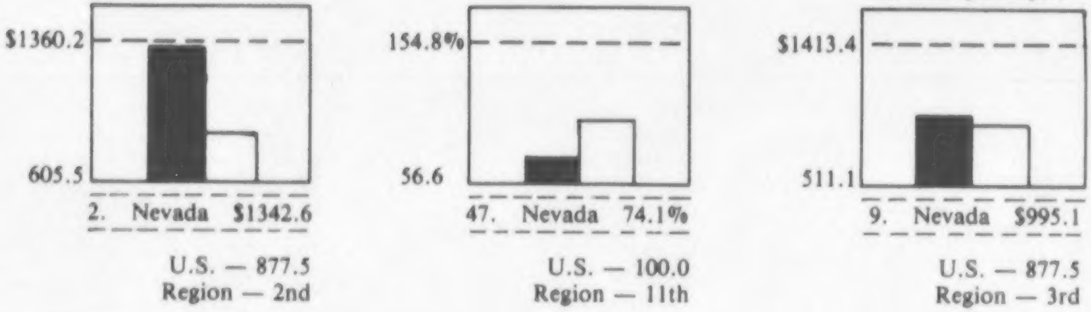
Eight Factors in State Support of Higher Education



1.
Resident Student Source
High School Graduates
(per 1,000 pop)

2.
College Attendance Ratio
FTE Students per
High School Graduate

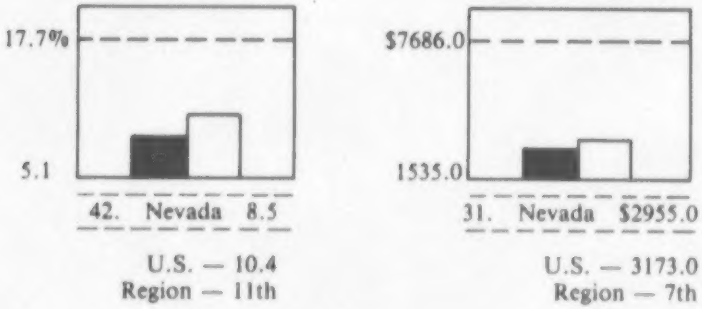
ENROLL
Student Enrollment Load
(1 x 2)



3.
Tax Capacity

4.
Tax Effort

TAX
Tax Revenues
(3 x 4)
Dollars per capita



5.
Allocation to Public
Higher Education
(% of Tax Revenues)

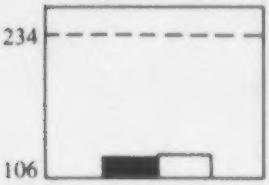
APP
Appropriations per Student
(Tax X 5/Enroll)

Table 2

Eight Factors in State Support of Higher Education

(Cont'd)

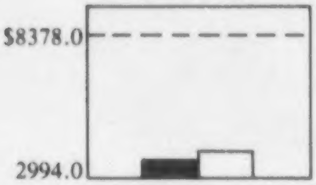
6.
Tuition Factor



30. Nevada 126

U.S. — 127
Region — 6th

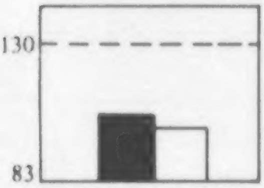
REV
Approp & Rev per Student
(App X 6)



34. Nevada $3724.0

U.S. — 4030.0
Region — 6th

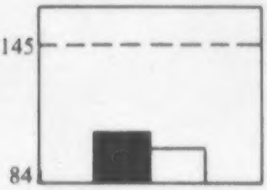
7.
System Cost Index



27. Nevada 105

U.S. — 100
Region — 8th

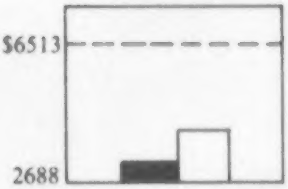
8.
Geographical Price Index



5. Nevada 107

U.S. — 100
Region — 1st

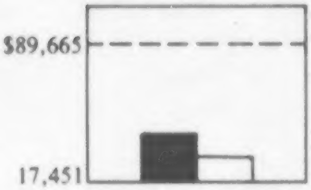
OUTPUT
Adj Estimated Approp. & Revenues per Student
(Rev/7 X 8)



42. Nevada $3314

U.S. — 4030
Region — 9th

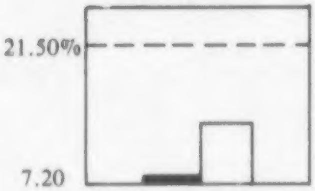
INPUTS
Adj. Potential Tax $ per Student
(3/1 X 2 X 7 X 8)



8. Nevada 41,345

U.S. — 30,389
Region — 1st

PROCESS
Collective Financial Process
(4 X 5 X 6)



48. Nevada 8%

U.S. — 13.2
Region — 11th

has been measured as a percentage of how much of state and local tax capacity is actually used. Nevada is 47th among the states at 74 percent of capacity and stands last in the region. These two factors are combined into tax revenues where Nevada is ninth in the country and third regionally.

In terms of allocation of tax revenue for operating expenses of higher education, Nevada is low nationally (42nd) at 8½ percent of total tax revenues, and last regionally. Measured by appropriations per student, Nevada is 31st nationally and sixth regionally. When the tuition factor is added (ratio of state appropriations *plus* tuition revenue to state appropriations alone), Nevada holds its central position near the national index and sixth regionally. When appropriations plus tuition revenues are measured on a per student basis, Nevada emerges 34th nationally and, once again, sixth regionally.

Halstead recognizes that different levels of instruction require different levels of expenditure and has constructed a system cost index which shows the relative cost per student in each state if each state financed its "mix" of institutions at the national average appropriation and tuitions for the types of institutions in the state. Nevada, with its mix of community colleges, state college, university, and professional schools stands near the middle nationally (27th) and eighth (of eleven) regionally.

Similarly, he has constructed a geographical price index which reflects the variation in prices for the same goods and services in different parts of the country. Nevada is high here, being fifth nationally and first regionally.

Using the cost and price indices to adjust the appropriations and tuition revenues per student (REV in Table 2) mentioned above, we find that Nevada slips from 34th to 42nd nationally and from sixth to ninth (of eleven) regionally. Similarly, using the indices to adjust potential tax dollars per student, Nevada is high at eighth nationally and first regionally. Finally, by combining the three actions over which the state and governing boards have control, (tax effort, allocation, and tutition) a measure of support emerges which has Nevada 48th in the nation and last regionally.

Where does all this leave us? According to the Halstead analysis, which is the most comprehensive we have so far, Nevada stands near the top, both nationally and regionally, in ability to support higher education, but is near the bottom nationally and last regionally in terms of actual support.

The Marshall Study

A study which refines even further our understanding of the support of higher education in the western region was completed in December 1978. Entitled "High Education Support in the Western States 1960-1977," it was prepared by Philip Marshall, executive vice president at Eastern Washington State University, who has since replaced Lee Dreyfus as chancellor in Wisconsin when Dreyfus became governor of the state.

Marshall analyzed the budgets and enrollments of colleges and universities in 11 western states for a 17 year period. Unfortunately, he had to replace Nevada with Hawaii because ". . . insufficient data were available in Nevada over the period of the study to make any analysis worthwhile . . ." Nevertheless, he contributes some interesting new approaches to achieving a valid comparison of higher education support among the western states which also shed light on the Nevada situation. For example, he replaces Halstead's HEPI (Higher Education Price Index), which is the forerunner of the eight factor approach from Table 2, with a revised index (RHEPI) which relies on a broader array of salary data for personnel costs than does the HEPI. As a result, the RHEPI inflates at a greater rate over the period of the study than the HEPI.

Marshall next shows constant dollar expenditure rates adjusted three ways — CPI (Consumer Price Index), HEPI, and RHEPI. However, he then goes on to make adjustments for two very significant additional factors in determining level of support.

One is the health science factor in which Marshall shows that while total enrollments increased 177 percent during the 17 year period, health science enrollments increased 213 percent. But more importantly, costs per FTE student in the health sciences have shot up 371 percent in the period under discussion, while going up 169 percent in the non-health sciences. The net effect here is to overstate the apparent support of general higher education in those states with medical schools, dental schools, etc. To put it differently, the support for non-health science higher education is diminished to the extent that funds are shifted to the support of high cost medical schools and related programs, especially in those states with emerging medical schools such as Nevada.

The other factor is recognition of the effect of instructional level (graduate, upper division and lower division). Marshall has done a careful job of actually weighting full-time equivalent credits by level of instruction. Constant dollar expenditures per FTE student weighted by level of instruction show a 7.6 percent greater decline over the 17-year period than expenditures per unweighted FTE student. This effect is aggravated in the western region of 11 states by a shift in enrollment mix toward more expensive upper division and graduate courses as follows:

Enrollment	1960	1976
Lower Division	57.9%	47.1%
Upper Division	34.5%	42.9%
Graduate	7.6%	10.0%

In summary, the Marshall analysis shows that using RHEPI, a weighted FTE, and excluding health science programs, constant dollar support of general higher education in the 11 western states is down 16.4 percent during the period studied. Since Nevada is at the bottom regionally in other measures of actual support when compared with ability to support, it seems safe to say that Nevada's decline in constant dollar support is even greater.

Additional Considerations

As we move into the 1980s, there are several aspects of higher education support in Nevada which will bear some close attention:

Costs — It is becoming increasingly difficult to make ends meet in the educational enterprise, as it is in many other activities these days. Higher education has changed, with new technologies calling for expensive new equipment. Also, colleges and universities are being required to do many things they never did before, such as complying with federal requirements in affirmative action, the Title IX sexual discrimination act, remodeling facilities for the handicapped, and a myriad of governmental reporting responsibilities which are very expensive in terms of staff time.

Hence there are fewer dollars left for basic instruction and research. The increasing cost pinch has hit the private sector particularly hard — the National Institute of Independent Colleges and Universities recently reported that 141 institutions closed during the 1970s, primarily because of escalating costs. Public institutions such as the University of Nevada are not immune to such influences either.

There is another very subtle dimension to the increasing cost of higher education which is becoming troublesome in many public institutions. This is the shifting trend from full-time to part-time students. Nevada state government funds its university on the basis of a certain number of dollars per FTE student (one person taking 15 credits at the undergraduate level and eight credits at the graduate level). But this mythical FTE student may actually be five part-time students each taking one three-credit course. Hence, although the university is being compensated to support one student, there may actually be five students parking their cars, walking on the grass, drinking coffee in the union, flushing the toilets, and requiring heating, cooling, record-keeping, academic advising and personal counseling. As the trend toward part-timeness developed in the '60s and '70s, the university absorbed these additional costs, but the time has come to recognize this new cost factor. Ways must be found to compensate for this new factor in the budget process.

Faculty Salaries — National figures reported by the American Association of University Professors, which has kept careful records for many years, show that faculty members have lost 20 percent of their purchasing power over the past 10 years. Closer to home, in 1979 University of Nevada faculty experienced an increase in salary of under 10 percent while the national rate of inflation according to Washington exceeded 18 percent. A concerted effort will have to be made in the 1980s to bring university professional staff in Nevada into the more favorable position with respect to cost of living, if the University is to remain competitive with other institutions and professions.

Growth — Nevada's growth rate in the 1970s was 35 percent as compared with the national rate of 7.3 percent. Unlike many other states, in the 1980s Nevada will apparently continue to experience a high rate of growth. According to projections by the Bureau of the Census, our state will be tied nationally with Colorado for third place with a growth rate of almost 21 percent in this decade.

Projected Population Gains, 1980-1990

High		Low	
Florida	27.1%	Kansas	5.4%
Arizona	27.0	S. Dakota	4.9
Colorado	20.8	Iowa	4.8
NEVADA	20.8	Connecticut	4.7
Alaska	19.2	Indiana	4.2
Utah	18.9	Illinois	3.6
Idaho	18.8	Pennsylvania	2.6
New Mexico	17.4	Ohio	2.3
Texas	16.3	New York	0.5
Wyoming	16.2	Dist. of Columbia	-5.0

Hence, our state should continue to have the resources necessary to support its system of higher education, as the need for more diversified higher education will increase dramatically.

Summary

Nevada appears to have a greater capacity to support its system of higher education than it is actually using when compared with other states in the western region and with the national average. Indications are that this high capacity will continue in the foreseeable future. In the final analysis, however, it must be the people of Nevada and their elected representatives who decide at which level they will support their university. Hopefully, the decision will be to bring Nevada higher education into a more competitive position regionally and nationally. Such a decision can only benefit the state and its citizens.

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Decade of Decline in Faculty Salaries

by Alfred W. Stoess

The decade of the 1970s has been one of nationwide decline in real faculty salaries. This period represents a marked contrast from the two previous decades. During that "golden era" in higher education characterized by rapid enrollment growth, there was increased public support for postsecondary education. The need for more faculty members resulted in substantial gains in salary.

Faculty of the University of Nevada, Las Vegas and the University of Nevada, Reno experienced a substantial loss in purchasing power during the decade ending in 1979-80. Although average salaries for all ranks increased by 9.0 percent from 1978-79 to 1979-80, the Consumer Price Index (CPI) for the same period increased by 13.4 percent. The result, therefore, is that average salaries adjusted for changes in the CPI *declined* 3.9 percent.[1] This decline in real salaries is larger than that for the previous academic year, 1977-78 to 1978-79. During that period, average salaries for all ranks of UNS faculty increased by 6.9 percent while the Consumer Price Index increased by 9.4 percent. The resulting decline in real salaries was 2.3 percent. However, the decline from 1978-1979 to 1979-80 is less than the consecutive declines in real salaries of 4.0 percent and 5.2 percent experienced for 1972-73 to 1973-74 and 1973-74 to 1974-75.

Table 1

Percentage Increases in the Consumer Price Index and Average Salary, Monetary and Real for UNS (UNR-UNLV) for Each of the One-year Periods since 1969-70[1]
(Standard Academic-Year Basis)

Academic Rank	1969-70 to 1970-71	1970-71 to 1971-72	1971-72 to 1972-73	1972-73 to 1973-74	1973-74 to 1974-75	1974-75 to 1975-76	1975-76 to 1976-77	1976-77 to 1977-78	1977-78 to 1978-79	1978-79 to 1979-80
Increase in Monetary Salary										
Professor	4.6	4.0	2.8	3.3	4.5	8.7	6.7	6.5	7.5	7.6
Associate	4.9	4.6	2.9	3.9	4.1	10.9	6.3	6.2	7.1	7.7
Assistant	4.4	2.1	2.4	7.2	3.9	11.1	6.3	8.7	4.5	7.4
Instructor	1.8	3.2	-3.4	12.4	10.9	13.6	17.3	2.9	2.1	9.3
All Ranks	6.9	5.4	4.0	4.6	5.3	9.5	7.6	7.0	6.9	9.0
Increase in Real Terms										
Professor	-3.2	0.4	-1.1	-5.2	-6.0	1.5	0.9	-0.1	-1.7	-5.1
Associate	-3.0	0.9	-1.0	-4.6	-6.3	3.6	0.5	-0.4	-2.1	-5.0
Assistant	-3.4	-1.5	-1.5	-1.6	-6.4	3.7	0.5	1.9	-4.5	-5.3
Instructor	-5.8	-0.4	-7.1	3.1	-0.2	6.0	10.9	-3.5	-6.5	-3.6
All Ranks	-1.1	1.8	0.0	-4.0	-5.2	2.2	1.7	0.3	-2.3	-3.9
Increase in CPI	5.1	3.6	4.0	9.0	11.1	7.1	5.8	6.7	9.4	13.4

[1] Monetary salary is salary measured in current dollars. The percentage increase in real terms is the percentage increase in monetary terms reduced by the percentage increase in the Consumer Price Index (CPI on standard academic-year basis.) Negative numbers indicate decreases.

A Decade of Decline

During the decade 1970 to 1980 real faculty salaries at UNLV and UNR declined. Average salaries in current dollars increased by 89.6 percent, but the Consumer Price Index increased by 111.3 percent during the same period. When the rise in average salaries is corrected for this price level change, there is a net decline of 10.3 percent in real salaries, or a 1.1 percent average annual decrease in real salaries.

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*Editor's Note: The American Association of University Professors compares institutions by category. AAUP defines Category I institutions as those which offer the doctorate and have conferred in the most recent three years an annual average of fifteen or more earned doctorates covering a minimum of three nonrelated disciplines. Category IIA includes institutions awarding degrees above the baccalaureate but not included in Category I. Category IIB includes institutions awarding only the baccalaureate or equivalent degree. Category III includes two-year institutions with academic ranks. Category IV includes institutions without academic ranks. AAUP classifies UNR in Category I and UNLV in Category IIA. Nevada's community colleges are included in Category IV.

Although the annual changes illustrated in Table 2 indicate that UNLV and UNR faculty experienced declining real salaries during the 1970s, the actual loss in purchasing power was even greater because of a change in faculty composition during the decade. From 1969-70 to 1979-80 the percentage of less highly-paid junior faculty members — assistant professors and instructors — declined from 47.6 percent to 24.3 percent of total faculty because of two factors: a slowdown in new hiring and the promotion of junior faculty to the senior ranks. As the salary increases of promoted faculty are likely to exceed those of other faculty, it is possible to conclude that average faculty salary increased by more than the average salary of continuing faculty in the various ranks. However, because of turnover due to deaths and retirements this conclusion must be qualified.

The change in faculty composition can be controlled through the calculation of a real salary series using constant percentage weights by academic rank. By using 1969-70 faculty weights (percentages) in determining real salaries, the results indicate a 16.6 percent decline in real salaries. This is a considerably larger decline than the 10.3 percent decline in real salaries based on the data for annual average salary. The 16.6 percent decline is equal to a 1.8 percent average annual rate of decrease. This indicates that changes in average salaries for the decade do not take into consideration changes in faculty composition by academic rank. These changes are basically due to conditions in the academic environment which are beyond the influence of the university. Among these conditions are the lessened demand for faculty as the rate of enrollment growth has declined and the failure of the public to consider higher education as important as it did in the 1960s.

The decline in faculty salaries due to inflation also may be illustrated by comparing what average salaries would have been if faculty salaries had increased with the inflation rate in the decade of the 1970s. Since the consumer price level more than doubled for 1969-70, the decline in real salaries can be shown by increasing 1969-70 average salaries by the increase in the cost of living for the period. These constant purchasing power averages can then be compared with the 1979-80 actual averages. The shortfall in faculty salary increases is presented in Table 3.

Table 2

Levels and Indexes of All-Ranks Salaries of UNS (UNR-UNLV) Faculty Members in Current Prices, 1967 Prices and Constant (1967) Weighted Prices (1969-70 = 100.0)

	Salaries In Current Prices		Salaries In 1967 Prices		Constant (69-70) Weighted Salaries in 1967 Prices	
Year	Average Salary	Index	Average Salary	Index	Average Salary	Index
1969-70	12,706	100.0	11,540	100.0	11,540	100.0
1970-71	13,585	106.9	11,416	98.9	11,146	96.6
1971-72	14,324	112.7	11,617	100.7	11,138	96.5
1972-73	14,894	117.2	11,618	100.7	10,950	94.9
1973-74	15,584	122.6	11,155	96.7	10,716	92.9
1974-75	16,408	129.1	10,572	91.6	9,979	86.5
1975-76	17,963	141.4	10,808	93.7	10,296	89.2
1976-77	19,328	152.1	10,994	95.3	10,454	90.6
1977-78	20,679	162.8	11,029	95.6	10,461	90.6
1978-79	22,108	174.0	10,774	94.4	10,130	87.8
1979-80	24,087	189.6	10,356	89.7	9,628	83.4
			Average Annual Rate of Increase in Salaries in 1967 Prices			
1969-70 to 1979-80				-1.1		-1.8

Table 3

Shortfall in Purchasing Power of Average Academic and All-Ranks Salaries of UNS Faculty Members 1969-70 to 1979-80

	Salary			
Academic Rank	1969-70	1979-80	1979-80 Constant Purchasing Power	Shortfall In Salary Increases
Professor	$16,959	$29,291	$35,834	$6,543
Associate	13,098	23,103	27,676	4,573
Assistant	10,843	18,970	22,911	3,941
Instructor	8,872	17,206	18,747	1,541
All Ranks	12,706	24,087	26,848	2,761

Average Salary by Rank and Institution

Real salaries declined at every rank. The decline by rank for associate and assistant professors closely follows the declines based on the constant-weight salaries. The greatest decline in real salaries occurred in the professor rank, and instructors suffered the least loss in real salaries. These differences are largely due to the practice followed in recent years of awarding larger percentage increases in salary to junior faculty than to senior faculty.

Similar analyses indicate that from 1969-70 to 1979-80 average salaries in current dollars increased by 92.0 percent at UNLV and 91.4 percent at UNR. Because of the 111.3 percent increase in the Consumer Price Index during the same period, average real salaries at UNLV and UNR declined 9.1 percent and 9.4 percent respectively, representing average annual decreases in real salaries of approximately 1.0 percent at each institution.

The actual losses in purchasing power after adjustments for changes in faculty composition during the decade are even greater. UNLV faculty suffered a 15.0 percent decline in real salaries after controlling for the change in faculty composition by using constant percentage weights in determining real salaries. This is equal to a 1.6 percent average annual rate of decline. Faculty at UNR fared even worse. During the decade UNR faculty experienced a loss in real salaries of 17.2 percent, or a 1.9 percent average decrease in real salaries when changes in faculty composition are considered.*

Community Colleges

Lack of data for all years of the decade prevents a similar analysis for Nevada's community colleges. The data available for the four-year period 1976-77 to 1979-80 indicates that real salaries of community college faculty members declined. Average salaries in current dollars increased by 21.6 percent. When the rise in community college faculty salaries is corrected for price level changes for the four-year period, there is a net decline of 4.7 percent in real salaries, or a 1.6 percent average annual decrease in real salaries.

Although community college faculty members experienced a greater loss in purchasing power due to changes in faculty composition, it is not possible to measure the effect of this change because community college faculty

Table 4

Levels and Indexes of All-Ranks Salaries of UNLV and UNR Faculty Members in Current Prices, 1967 Prices and Constant (1967) Weighted Prices

(1969-70 = 100.0)

	UNLV Salaries in Current Prices		UNLV Salaries in 1967 Prices		UNLV Constant (69-70) Weighted Salaries in 1967 Prices		UNR Salaries in Current Prices		UNR Salaries in 1967 Prices		UNR Constant (69-70) Weighted Salaries in 1967 Prices	
Year	Avg. Salary	Index	Avg. Salary	Index	Avg. Salary	Index	Avg. Salary	Index	Avg. Salary	Index	Avg. Salary	Index
1969-70	$12,202	100.0	$11,083	100.0	$11,083	100.0	$12,882	100.0	$11,700	100.0	$11,700	100.0
1970-71	12,981	106.4	10,908	98.4	10,285	97.7	13,930	108.1	11,706	100.0	11,246	96.1
1971-72	13,813	113.2	11,203	101.1	10,969	99.0	14,664	113.8	11,893	101.6	11,120	95.0
1972-73	14,443	118.4	11,266	101.6	10,804	97.5	15,185	117.9	11,845	101.2	10,961	93.7
1973-74	15,088	123.6	10,800	97.4	10,462	94.4	15,967	124.0	11,429	97.7	10,538	90.1
1974-75	15,859	130.0	10,218	92.2	9,871	89.1	16,833	130.7	10,846	92.7	9,923	84.8
1975-76	17,443	143.0	10,495	94.7	10,132	91.4	18,404	142.9	11,073	94.6	10,287	87.9
1976-77	18,677	153.1	10,624	95.9	10,259	92.6	19,965	155.0	11,357	97.1	10,466	89.4
1977-78	20,039	164.2	10,687	96.4	10,268	92.6	21,260	165.0	11,339	96.9	10,482	89.6
1978-79	21,530	176.4	10,492	94.7	9,942	89.7	22,623	175.6	11,025	94.2	10,158	86.8
1979-80	23,433	192.0	10,074	90.9	9,420	85.0	24,658	191.4	10,601	90.6	9,689	82.8
	Average Annual Rate of Increase in Salaries in 1967 Prices											
1969-70 to 1979-80				-1.0		-1.6				-1.0		-1.9

Table 5

Levels and Indexes of All-Range Salaries of Community College Faculty Members in Current Prices and 1967 Prices

(1976-77 = 100.0)

	Salaries In Current Prices		Salaries in 1967 Prices	
Year	Average Salary	Index	Average Salary	Index
1976-77	$14,314	100.0	$8,142	100.0
1977-78	16,349	114.2	8,719	107.1
1978-79	16,867	117.8	8,220	101.0
1979-80	18,053	126.1	7,761	95.3
	Average Annual Rate of Increase in Salaries in 1967 Prices			
1976-77 to 1979-80				-1.6

are unranked. Although it is possible to make comparisons among the community colleges, no such comparison is included in this review for numerous reasons. Among these reasons would be the effect of turnover on average salaries for the relatively small community college faculties, uneven enrollment growth patterns at the community colleges resulting in the addition of new instructional positions at varying rates, the transfer of faculty from one community college to another, and differences in programs of study requiring faculty from disciplines whose salaries vary due to differences in demand and supply for these disciplines. This last factor undoubtedly also affects salaries at UNLV and UNR.

Comparisons with Other Occupational Groups

No conclusions on the relative status of faculty are meaningful unless comparisons are made with other comparable occupational groups. Such comparisons, however, are never as current as desired because of the time required to compile the data on comparable groups. The evidence that is available indicates that the decline in real salaries of faculty exceeded that of any other occupational category.[2]

Summary and Conclusions

It is obvious that faculty salaries at UNLV and UNR have failed to increase as fast as prices during the period 1969-70 to 1979-80. There is also limited evidence that the same is true of community college faculty salaries.

The UNS Professional Compensation Committee considered the loss of faculty purchasing power in developing its recommendations for the next biennium. The Board of Regents at its May 9, 1980, meeting accepted and accommodated into the 1981-1983 Biennial Budget request some recommendations of the committee. The recommendations adopted are:

1) A separate appropriation to fund the difference between the increase in salary appropriated by the legislature for the 1979-1981 biennium and the loss in purchasing power experienced by the faculty during this period. The 12.9 percent loss of purchasing power experienced by the faculty during this two-year period requires an appropriation of approximately $5,150,000 in compensation (salary plus required fringe benefits).

2) An annual Consumer Price Index adjustment using the Western Regional All Urban Consumer Price Index on a calendar year basis. It is the consensus of economists that movement of this index will require increases of 12.0 percent for 1981-82 and 9.8 percent for 1982-83 for increases in the Consumer Price Index calendar years 1980 and 1981.

It is believed that these recommendations, if adopted by the legislature, will enable faculty to maintain purchasing power during inflation. In order to improve the economic position of the faculty, the committee recommended a merit, promotion and equity adjustment pool equal to 3.5 percent for each professional FTE position.

The committee also recommended repeal of the state law limiting salaries to 95 percent of the salary of the governor. The Board of Regents adopted these recommendations as part of the 1981-1983 Biennial Budget request.

The consequences of not finding a solution to the decline in the economic position of faculty are difficult to predict. It is obvious that if real salaries are permitted to continue to decline, faculty morale will be affected. Also, it is possible that there may be increased interest in collective bargaining in order to promote the economic interests of the faculty. Some faculty members may be forced to seek other employment which may or may not be professionally related in order to supplement their incomes. Others may make the decision to leave higher education for fields that are viewed as more financially rewarding.

The decade of the 1970s has been one of serious economic decline for the faculty of the University of Nevada System. The question is whether the decline in real salaries can be reversed. The answer in large part lies with the 1981 Legislature. Whether the legislature is willing and able to provide a solution depends on the economic climate of Nevada and the nation in early 1981 and the "message" received by the legislature from the voters in November of 1980.

Footnotes

[1] It should be noted that the decline in real salaries is not calculated by subtracting the percentage increase in salaries from the increase in the CPI. The increase or decrease is computed by dividing the adjusted salary index by the adjusted CPI.

[2] See Howard R. Bowen, *Academic Compensation: Are Faculty and Staff in American Higher Education Adequately Paid?*, New York: Teachers Insurance and Annuity Association, 1978, for such data.

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Higher Education Policy: A Bibliography*

by Thomas Stauffer, American Council on Education

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